

TWiki Reference Manual (Fri, 31 Mar 2006 build 9623)

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

Doubleclick *anywhere* to return to the top of the page.

- [TWiki System Requirements](#)
 - [Server Requirements](#)
 - [Client Requirements](#)
 - [Important note about TWiki Plugins](#)
- [TWiki Installation Guide](#)
 - [Basic Installation](#)
 - [Next Steps](#)
 - [Troubleshooting](#)
- [TWiki Upgrade Guide](#)
 - [Overview](#)
 - [Upgrade Requirements](#)
 - [Major Changes Compared to TWiki Release 01-Sep-2004](#)
 - [Automated Upgrade Procedure](#)
 - [Manual Upgrade Procedure](#)
 - [Upgrading a Beta](#)
- [TWiki User Authentication](#)
 - [Overview](#)
 - [Password Management](#)
 - [New User Registration](#)
 - [Login Management](#)
 - [Sessions](#)
 - [TWiki Username vs. Login Username](#)
 - [Changing Passwords](#)
 - [Changing E-mail Addresses](#)
 - [Controlling access to individual scripts](#)
 - [How to choose an authentication method](#)
- [TWiki Access Control](#)
 - [An Important Control Consideration](#)
 - [Permissions settings of the webs on this TWiki site](#)
 - [Authentication vs. Access Control](#)
 - [Users and Groups](#)
 - [Restricting Access](#)
 - [Access Control quick recipes](#)
- [TWiki Text Formatting](#)
 - [TWiki Editing Shorthand](#)
 - [Using HTML](#)
 - [Hyperlinks](#)
 - [TWiki Variables](#)
 - [TWikiPlugin Formatting Extensions](#)
 - [Common Editing Errors](#)
- [TWiki Variables](#)
 - [Using Variables](#)
 - [Variable Names](#)
 - [Preferences Variables](#)
 - [Predefined Variables](#)
- [TWiki Formatted Search](#)
 - [Syntax](#)
 - [Examples](#)

- [File Attachments](#)
 - [What Are Attachments Good For?](#)
 - [Uploading Files](#)
 - [Downloading Files](#)
 - [Moving Attachment Files](#)
 - [Deleting Attachments](#)
 - [Linking to Attached Files](#)
 - [File Attachment Contents Table](#)
 - [File Attachment Controls](#)
 - [Known Issues](#)
- [TWiki Forms](#)
 - [Overview](#)
 - [Defining a Form Template](#)
 - [Enabling Forms by Web](#)
 - [Add a form to a topic](#)
 - [Build an HTML form to create new Form-based topics](#)
 - [Changing a form](#)
 - [Searching for Form Data](#)
 - [Extending the range of form data types](#)
 - [Gotcha!](#)
 - [Importing Category Table Data](#)
- [TWiki Templates](#)
 - [Overview](#)
 - [The TWiki Template System](#)
 - [Master Templates](#)
 - [HTML Page Templates](#)
 - [Template Topics](#)
 - [Master Templates by Example](#)
- [TWiki Skins](#)
 - [Overview](#)
 - [Changing the default TWiki skin](#)
 - [Defining Skins](#)
 - [Variables in Skins](#)
 - [Using Cascading Style Sheets](#)
 - [Attachment Tables](#)
 - [Packaging and Publishing Skins](#)
 - [Browsing Installed Skins](#)
 - [Activating Skins](#)
 - [Hard-Coded Skins](#)
- [TWiki Meta Data](#)
 - [Overview](#)
 - [Meta Data Syntax](#)
 - [Meta Data Specifications](#)
 - [Viewing Meta Data in Page Source](#)
 - [Rendering Meta Data](#)
 - [Known Issues](#)
- [TWiki Plugins](#)
 - [Overview](#)
 - [Installing Plugins](#)
 - [Managing Installed Plugins](#)
 - [The TWiki Plugin API](#)
 - [Creating Plugins](#)
 - [Recommended Storage of Plugin Specific Data](#)
 - [Maintaining Plugins](#)

- [Environment](#)
 - [Preferences](#)
 - [User Handling and Access Control](#)
 - [Webs, Topics and Attachments](#)
 - [Assembling Pages](#)
 - [E-mail](#)
 - [Creating New Topics](#)
 - [Special handlers](#)
 - [Searching](#)
 - [Plugin-specific file handling](#)
 - [General Utilities](#)
 - [Deprecated functions](#)
- [TWiki CGI and Command Line Scripts](#)
 - [CGI Scripts](#)
 - [Command Line Scripts](#)
- [TWiki Site Tools](#)
 - [WebNotify - recent changes alert](#)
 - [WebSearch - search TWiki site](#)
 - [WebChanges - what's new](#)
 - [WebIndex - list of topics](#)
 - [WebStatistics - site statistics](#)
 - [Log Files](#)
 - [E-mail](#)
 - [Site Permissions](#)
- [Managing Topics](#)
 - [Overview](#)
 - [How to Rename/Move/Delete a Topic](#)
 - [Deleted Topics: How to Clear the Trash](#)
 - [Redirecting from an Old Topic](#)
 - [How Rename/Move Works](#)
 - [Special Considerations](#)
 - [Known Issues](#)
- [Managing Webs](#)
 - [Overview](#)
 - [Choose Web Template](#)
 - [Adding a New Web](#)
 - [Renaming or Deleting a Web](#)
 - [Hierarchical Webs](#)
- [Manage Users](#)
 - [Authentication and Access Control](#)
 - [Register User](#)
 - [Change, Reset and Install Passwords](#)
 - [Removing User Accounts](#)
- [Appendix A: TWiki Development Timeline](#)
 - [TWiki Release 4.0.0 \(Dakar\), 01 Feb 2006](#)
 - [01-Sep-2004 Release \(Cairo\)](#)
 - [01-Feb-2003 Release \(Beijing\)](#)
 - [01-Dec-2001 Release \(Athens\)](#)
 - [01-Sep-2001 Release](#)
 - [01-Dec-2000 Release](#)
 - [01-May-2000 Release](#)
 - [01-Sep-1999 Release](#)
 - [01-Jul-1999 Release](#)
 - [1998 Releases](#)

- [Dev Flow](#)
- [Appendix B: Encode URLs With UTF8](#)
 - [Current Status](#)
 - [Details of Implementation](#)
 - [Testing and Limitation](#)
- [Appendix C: TWiki CSS](#)
 - [Who should read this document?](#)
 - [Naming conventions](#)
 - [Tips](#)

Related Topics: [TWikiSite](#), [TWikiHistory](#), [TWikiPlannedFeatures](#), [TWikiEnhancementRequests](#), [UserDocumentationCategory](#), [AdminDocumentationCategory](#)

TWiki System Requirements

Server and client requirements

Low client and server base requirements are core features that keep TWiki widely deployable, particularly across a range of browser platforms and versions. Many [Plugins](#) and [contrib modules](#) exist which enhance and expand TWiki's capabilities; they may have additional requirements.

Server Requirements

TWiki is written in Perl 5, uses a number of shell commands, and requires [RCS \(Revision Control System\)](#), a GNU Free Software package. TWiki 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.

<u>Resource</u>	<u>Required Server Environment *</u>
Perl	5.005_03 or higher (5.8.4 or higher is recommended)
RCS	5.7 or higher (including GNU diff) Optional, TWiki 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 <code>diff -v</code>) 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 using the TWiki:Codev.UpgradeTWiki script
GNU fgrep, egrep	Modify command line parameters in configure if you use non-GNU grep programs
Cron/scheduler	• Unix: <code>cron</code> • Windows: <code>cron</code> equivalents
Web server	Apache is well supported; see TWiki:TWiki.InstallingTWiki#OtherWebServers for other servers

Required CPAN Modules

The following Perl modules are used by TWiki:

<u>Module</u>	<u>Preferred version</u>
Algorithm::Diff (included)	
CGI::Carp	>=1.26
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)	
Time::Local	>=1.11

Optional CPAN Modules

The following Perl modules may be used by TWiki:

<u>Module</u>	<u>Preferred version</u>	<u>Description</u>
CGI::Cookie	>=1.24	Used for session support
CGI::Session	>=3.95	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
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 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 TWiki [standard installation](#) has relatively low browser requirements:

- HTML 3.2 compliant
- Cookies, if persistent sessions are required

CSS and Javascript are used in most skins, although there is a low-fat skin (Classic skin) available that minimises these requirements. Some skins will require more recent releases of browsers. The default skin (Pattern) is tested on IE 6, Safari, and Mozilla 5.0 based browsers (such as Firefox). The default skin ([PatternSkin](#)) requires Firefox 1.5 (1.0 will show minor visual quirks).

You can easily select a balance of browser capability versus look and feel. Try the installed skins at [TWikiSkinBrowser](#) and more at [TWiki:Plugins.SkinPackage](#).

Important note about TWiki Plugins

- Plugins can require just about anything - browser-specific functions, stylesheets (CSS), Java applets, cookies, specific Perl modules,... - check the individual Plugin specs.
 -  **Note:** Plugins included in the TWiki distribution do not add requirements, except for the [CommentPlugin](#) which requires Perl 5.6.1.

Related Topics: [AdminDocumentationCategory](#)

TWiki Installation Guide

Installation instructions for the TWiki 4.0 production release.

TWiki should be fine with any web server and OS that meet the [system requirements](#). The following installation instructions are written for experienced system administrators; please review the [AdminSkillsAssumptions](#) before you install TWiki. If you need help, ask a question in the [TWiki:Support](#) web or on [TWiki:Codev.TWikiIRC](#) (irc.freenode.net, channel #twiki)

 **Hint:** [TWiki:TWiki.InstallingTWiki](#) on TWiki.org has supplemental documentation that help you install TWiki on different platforms, environments and web hosting sites.

Basic Installation

1. **Download** the TWiki distribution from <http://TWiki.org/download.html>.
2. **Make a directory** for the installation and **unpack the distribution** in it.
3. **Make sure** the user that runs CGI scripts on your system can read and write all files in the distribution.
Detailed instructions on file permissions are beyond the scope of this guide, but in general:
 - During installation and configuration, the CGI user needs to be able to read and write *everything* in the distribution,
 - Once installation and configuration is complete, the CGI user needs write access to everything under the data and pub directories and to lib/LocalSite.cfg. *Everything else* should be read-only.
 - Everybody else should be denied access to everything, always.
4. **Make sure** Perl 5 and the Perl CGI library are installed on your system.
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 in the twiki/bin directory.

 Some systems require a special extension on perl scripts (e.g. .cgi or .pl). If necessary, rename all files in twiki/bin (i.e. rename view to view.pl etc). If you do this, make sure you set the ScriptSuffix option in configure (Step 6).
5. **Create the file** /twiki/bin/LocalLib.cfg.
There is a template for this file in /twiki/bin/LocalLib.cfg.txt.
The file must contain a setting for \$twikiLibPath, which must point to the absolute file path of your twiki/lib e.g. /home/httpd/twiki/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 webserver user has to be able to read those files as well.
6. **Configure the webserver** so you can execute the bin/configure script from your browser.
 - Explicit instructions for doing this are beyond the scope of this document, though there is a lot of advice on TWiki.org covering different configurations of webserver. To help you out, there's an example Apache httpd.conf file in twiki_httpd_conf.txt at the root of the package. This file also contains advice on securing your installation. There's also a script called tools/rewriteshebang.pl to help you in fixing up the shebang lines in your CGI scripts.
7. Run the configure script from your browser, and resolve any errors or warnings it tells you about.

You now have a basic, unauthenticated installation running. At this point you can just point your Web browser at `http://yourdomain.com/twiki/bin/view` and start TWiki-ing away!

Next Steps

Once you have your TWiki running, you can move on to customise it for your users.

- **Review [TWikiPreferences](#) settings** - read through it and set any additional settings you think you might need (you can click the 'Edit' button near the top to edit the settings in place)
 -  It is recommended to **copy** any settings or variables that you want to customize from [TWiki04.TWikiPreferences](#) and **paste** them into [Main.TWikiPreferences](#). This will protect your local customizations from being overwritten in later upgrades. See notes at top of [TWiki04.TWikiPreferences](#) for more information.
- **Customize user home pages** - read and change [NewUserTemplate](#).
- **Enable authentication** - read [TWikiUserAuthentication](#).
- **Clear admin notes** - some pages are meant to be customized after choice of authentication - check and update these topics (remove notice):
 - [ChangePassword](#)
 - [ResetPassword](#)
 - [ChangeEmailAddress](#)
 - [TWikiRegistration](#) fields can be customzied to the needs of your organization
 - [TWikiAdminGroup](#)
- **Enable e-mail notification** - read [TWikiSiteTools#WebNotify](#) to get [WebChangesAlerts](#).
- **Automate update of site statistics** - read [TWikiSiteTools#WebStatistics](#)
- **Automate removal of expired sessions and lease files** - read [TWikiScripts#tick_twiki_pl](#).
- **Install Plugins** if needed - [TWiki:Plugins](#) is an extensive library of Plugins for TWiki, that enhance functionality in a huge number of ways. A few Plugins are pre-installed in the TWiki distribution. Installation instructions are included in Plugins you download from [TWiki:Plugins.PluginPackage](#) on TWiki.org.
- **Review known issues** - visit [TWiki:Codev.KnownIssuesOfTWiki04x00x00](#) and fix issues that apply to you.

Troubleshooting

- The first step is to re-run the configure script and make sure you have resolved all errors, and are happy that you understand any warnings.
- [TWiki:TWiki.InstallingTWiki](#) on TWiki.org has supplemental documentation that help you install TWiki on different platforms, environments and web hosting sites.
- If you need help, ask a question in the [TWiki:Support](#) web or on [TWiki:Codev.TWikiIRC](#) (irc.freenode.net, channel #twiki)

TWiki Upgrade Guide

Upgrade from the previous TWiki 01-Sep-2004 Prodcution Release to TWiki-4.0.0

Overview

TWiki-4.0.0 is a major new release. You can chose between an automated upgrade using a script or a manual update.

Upgrade Requirements

- Please review the [AdminSkillsAssumptions](#) before you upgrade TWiki
- Review [TWiki:TWiki.TWikiUpgradeTo04x00x00](#) for latest information and experience notes.
- To upgrade from a release prior to TWiki Release 01-Sep-2004, start with [TWiki:TWiki.UpgradingTWiki](#) on TWiki.org
- To upgrade from a standard TWiki Release 01-Sep-2004 to the latest TWiki-4.0.0 Production Release, follow the instructions below
- 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. Make sure you take a backup!
- Not all Plugins written for TWiki Release 01-Sep-2004 are fully supported with Dakar. Make sure the Plugins you use can be upgraded as well!

Major Changes Compared to TWiki Release 01-Sep-2004

See [TWikiReleaseNotes04x00x00](#).

Automated Upgrade Procedure

If you would prefer to do things manually, **or if you made custom modifications to distributed files** (except topics), then skip to the [manual upgrade procedure](#) below.

The upgrade script is called "UpgradeTwiki", and is found in the root of the distribution. It can be run by any user, though you will need to make sure you correct the permissions so that the webserver user can write all files in the new installation when you have finished. The upgrade script does **not** write to your existing installation.

The upgrade script will upgrade the **TWiki core only**. Plugins will need to be upgraded separately.

Note: To upgrade from a Beta, **do not** use UpgradeTwiki. Instead follow the steps outlined in [Upgrading a Beta](#), below.

It will:

- Create a new TWiki installation, placing the files from the distribution there as appropriate
- Where possible, merge the changes you've made in your existing topics and attachments into the new twiki
- Where not possible, it will tell you, and you can inspect those differences manually
- Create new configuration files for the new TWiki based on your existing configuration information
- Set the permissions in the new TWiki so that it should work straight away
- Attempt to setup authentication for your new TWiki, if you are using .htaccess in the old one
- Tell you what else you need to do

To perform the upgrade, you need to:

- Check first if there is a newer UpgradeTwiki script available, see [TWiki:Codev.UpgradeTwiki](#)
- Create a new directory for your new installation: Let's call this `distro/`
- Put the distribution zip file in `distro/`
- Unzip it
- Choose a directory for the new installation. I will call this `new_twiki`. This directory must not already exist.
- Change directory to `distro/` and run:
`./UpgradeTwiki <full path to existing_twiki's setlib.cfg> <full path to new_twiki>`
- confirm your system settings by pointing your browser to the `configure` script

Assuming all goes well, UpgradeTwiki will give you the final instructions.

Visit [TWiki:Codev.KnownIssuesOfTWiki04x00x00](#) and fix known issues that apply to you.

There are a few points worth noting:

- UpgradeTwiki may not be able to merge all the changes you made in your existing TWiki into the new installation, but it will tell you which ones it couldn't deal with
- UpgradeTwiki creates the new installation in a new directory tree. It makes a complete copy of all your existing data, so:
 - Clearly you need to point it to a location where there is enough space
 - If you have symlinks under your `data/` directory in your existing installation, these are reproduced as actual directories in the new structure. It is up to you to pull these sub-directories out again and re-symlink as needed
- UpgradeTwiki doesn't deal with custom templates or Plugins, you will have to reinstall these in the new installation.
- If you are using the Htpasswd login manager, then note that email addresses for users have moved out of user topics and into the password database. There is a script that performs this extra upgrade step for you - see `tools/upgrade_emails.pl`.

Manual Upgrade Procedure

The following steps are a rough guide to upgrading only. It is impossible to give detailed instructions, as what you have to do may depend on whether you can configure the webserver or not, and how much you have changed distributed files in your current TWiki

release.

1. Follow the installation instructions, and install the new release in a new directory.
2. Copy your local webs over to the data and pub directories of the new install
 - You could also use softlinks to link the web directories in data and pub to the old installation area
3. 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 '{}' \;`
4. Examine your old TWiki.cfg, and for each local setting, set the corresponding value in the `configure` interface for the new install.
 - If you can't use `configure`, then copy the **new** `TWiki.cfg` to `LocalSite.cfg`, and edit `LocalSite.cfg`. Remove all the settings that you didn't change in your previous install, and change the remaining settings to the values from your **old** `TWiki.cfg`.
5. Transfer any customized and local settings from [TWiki04.TWikiPreferences](#) to the topic pointed at by `{LocalSitePreferences}` ([Main.TWikiPreferences](#)). This avoids having to write over files in the distribution.
6. If you changed any of the topics in the original TWiki distribution, you will have to transfer your changes to the new install manually. There is no simple way to do this, though the following procedure may help:
 1. Install a copy of the original TWiki release you were using in a temporary directory
 2. Use 'diff' to find changed files, and transfer the changes into the new Dakar install.
 3. Install updated plugins into your new area.
7. Point your webserver at the new install.
8. Visit [TWiki:Codev.KnownIssuesOfTWiki04x00x00](#) and fix known issues that apply to you.
9. If you are using the Htpasswd login manager, then note that email addresses for users have moved out of user topics and into the password database. There is a script that performs this extra upgrade step for you - see `tools/upgrade_emails.pl`.

You are **highly** recommended **not** to change any distributed files if you can avoid it, to simplify future upgrades!

Upgrading a Beta

If you followed the recommendations and avoided modifying any distributed files, then this is quite straightforward:

1. Follow the installation instructions, and install the new release in a new directory.
2. Copy your local webs over to the data and pub directories of the new install
 - Be careful to copy over the user topics and `TWikiUsers?.txt` in the Main web
3. Copy over your `bin/LocalLib.cfg` and `lib/LocalSite.cfg` files
4. Copy over any local files you created (such as `.htpasswd` and `.htaccess` files)
5. Point your webserver at the new install.

If you changed any of the distributed files, you will have to continue from Step 5 above.

TWiki User Authentication

TWiki site access control and user activity tracking options

Overview

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

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

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

Quick Authentication Test - Use the %WIKIUSERNAME% variable to return your current identity:

- You are [TWikiGuest](#)

TWiki user authentication is split into three sections; password management, user registration, and login management. Password management deals with how users are recognised (authenticated). 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 are remembered using a "session id" 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.

Please note [FileAttachments](#) are not protected by TWiki User Authentication.

 **Tip:** [TWiki:TWiki.TWikiUserAuthenticationSupplement](#) on TWiki.org has supplemental documentation on user authentication.

Password Management

As shipped, TWiki supports the Apache 'htpasswd' password manager. This manager supports the use of `.htpasswd` files on the server. These files can be unique to TWiki, 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.

New User Registration

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

The registration process is responsible for creating user topics.

Login Management

Login management controls the way users have to log in. There are three basic options; no login, login via a TWiki login page, and login using the webserver authentication support.

You can select your chosen login through the Security Settings pane in the `configure` interface.

No Login

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 [TWikiGuest](#) 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 the [TWikiAdminGroup](#).

Template Login

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.

Enabling Template Login

1. Use the [configure](#) interface to
 1. enable the TemplateLogin login manager (on the Security Settings pane).
 2. select the appropriate password manager for your system, or provide your own.

2. Register yourself in the [TWikiRegistration](#) 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 [TWikiAdminGroup](#) 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 TWiki access controls.

[TWikiAccessControl](#) has more information on setting up access controls.

 At this time [TWikiAccessControls](#) 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 [TWikiRegistration](#) form by deleting or adding input tags. 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.

 You can customize the default user home page in [NewUserTemplate](#). The same variables get expanded as in the [template topics](#)

Apache Login

Using this method TWiki 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.

TWiki maps the `REMOTE_USER` that was used to log in to the webserver to a [WikiName](#) using the table in [TWikiUsers](#). 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 TWiki Template Login can be used to authenticate Apache users, using the Apache Basic Authentication support. This allows the TWiki registration support to maintain usernames and passwords.

Enabling Apache Login using `mod_auth`

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

1. Use [configure](#) to select the ApacheLogin login manager.
2. Use [configure](#) to set up TWiki to create the right kind of `.htpasswd` entries.
3. Create a `.htaccess` file in the `twiki/bin` directory.

 There is an template for this file in `twiki/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 [TWikiAccessControls](#) 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 [TWikiRegistration](#) by deleting or adding input tags. 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.

You can customize the default user home page in [NewUserTemplate](#). The same variables get expanded as in the [template topics](#)

5. Register yourself in the [TWikiRegistration](#) 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 [TWikiAdminGroup](#) 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 TWiki access controls.

[TWikiAccessControl](#) has more information on setting up access controls.

Logons via bin/logon

Any time a user enters a page that needs authentication, they will be forced to log on. It may be convenient to have a "logon" 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 accomplishes this. The **bin/logon** script must be setup in the **bin/.htaccess** file to be a script which requires a `valid` user. However, once authenticated, it will simply redirect the user to the view URL for the page from which the logon script was linked.

Sessions

TWiki uses the [CPAN:CGI::Session](#) and [CPAN:CGI::Cookie](#) modules to track sessions using cookies. 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. See [How to choose an authentication method](#) for a discussion of the pros and cons of the various authentication methods.

There are a number of [TWikiVariables](#) available that you can use to interrogate your current session. You can even add your own session variables to the TWiki 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 TWiki 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 TWiki preference, the session variables value takes precedence over the TWiki 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="" }%
```

Cookies and Transparent Session IDs

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

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

TWiki 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](#)).

TWiki internally manages two usernames: Login Username and TWiki Username.

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

TWiki can automatically map an Intranet (Login) Username to a TWiki 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 **%MAINWEB%.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 (**TWiki/ChangePassword**)
- The [ResetPassword](#) form (**TWiki/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 (**TWiki/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 TWiki 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 TWiki 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!

Firstly, the **most secure** method is without doubt to use the webserver authentication support, with Sessions turned **off**.

The **second most secure method** is to use TWiki's internal authentication with Sessions turned **off**. This method is less secure than using the webserver because passwords are sent in **plain text** and can therefore be intercepted in transit.

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 TWiki 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, TWiki 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.

The **third most secure** method is to use sessions with IP matching (`{UseIPMatching}` switched on). Shorter session expiry times are more secure (`{Sessions}{ExpireAfter}`). The default session lifetime is 6 hours, which is quite a long lifetime for a session.

Session IDs are usually stored by TWiki 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 TWiki 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 TWiki 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 the **least secure method**.

See [TWiki:TWiki.SecuringTWikiSite](#) for more information.

TWiki Access Control

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

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

 **Tip:** [TWiki:TWiki.TWikiAccessControlSupplement](#) on TWiki.org has additional documentation on access control.

An Important Control Consideration

Open, freeform editing is the essence of [WikiCulture](#) - what makes TWiki 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 TWiki, content is transparently preserved under **revision control**:
 - Edits can be undone by the [TWikiAdminGroup](#) (the default administrators group; 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 TWiki site

Web	Sitemap	VIEW		CHANGE		RENAME	
	Listed	DENY	ALLOW	DENY	ALLOW	DENY	ALLOW
Main ...	on						TWikiCommunityGroup

TWiki04 ...	on				TWikiAdminGroup, CrawfordCurrie		TWikiAdminGroup
Codev ...	on			TWikiGuest			TWikiCommunityGroup
Plugins ...	on			TWikiGuest			TWikiCommunityGroup
Sandbox ...	on						TWikiCommunityGroup
Support ...	on						TWikiCommunityGroup
TWiki ...	on			TWikiGuest			TWikiCommunityGroup
TWiki01 ...	on				TWikiAdminGroup		TWikiAdminGroup
TWiki02 ...	on				TWikiAdminGroup		TWikiAdminGroup
TWiki03 ...	on				TWikiAdminGroup		TWikiAdminGroup

See [TWikiAccessControl](#) for details

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.
- [TWikiGuest](#) is the guest account - used by unauthenticated users.
- The TWiki web must not deny view to [TWikiGuest](#); otherwise, people will not be able to register.

Note: Above table comes from [SitePermissions](#)

Authentication vs. Access Control

Authentication: Identifies who a user is based on a login procedure. See [TWikiUserAuthentication](#).

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 [TWikiRegistration](#). 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 [TWikiUsers](#) topic.

The default visitor name is [TWikiGuest](#). This is the non-authenticated user.

Managing Groups

Groups are defined by group topics located in the **Main** web, such as the [TWikiAdminGroup](#). To create a new group, visit [TWikiGroups](#) 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 TWikiAdminGroup topic write:

- **Set ALLOWTOPICCHANGE = Main.TWikiAdminGroup**

 **Note:** TWiki 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

By mistyping a user or group name in the settings, it's possible to lock a topic so that no-one can edit it from a browser. To avoid this, add the [WikiNames](#) of registered administrators to the super admin group topic called **TwikiAdminGroup**. The name of this topic is defined by the {SuperAdminGroup} configure setting. Example group setting:

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

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.
- Restricting CHANGE blocks creating new topics, changing topics or attaching files.
- Restricting RENAME controls who is allowed to rename, move or delete a topic.
 - To rename, move or delete a topic, the user also needs VIEW and CHANGE permission. They also need CHANGE access to change references in any referring topics (though the rename can proceed without this access), and CHANGE access to the target topic.
- Restricting MANAGE controls access to certain management functions, such as 'create web'. It must be set in the TWiki04 web.

Controlling access to a Web

You can define restrictions of who is allowed to view a TWiki 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 >**

Be careful with empty values for any of these. In older versions of TWiki,

- **Set ALLOWWEBVIEW =**

meant the same as not setting it at all. However since TWiki Dakar release, it means *allow noone access* i.e. prevent anyone from

viewing the web. Similarly

- **Set DENYWEBVIEW =**

now means *do not deny anyone the right to view this web*. See "How TWiki evaluates ALLOW/DENY settings" below for more on this.

Controlling access to a Topic

- You can define these settings in the [WebPreferences](#) 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. In older versions of TWiki,

- **Set ALLOWTOPICVIEW =**

meant the same as not setting it at all. However since TWiki Dakar release, it means *allow no-one access* i.e. prevent anyone from viewing the topic. Similarly

- **Set DENYTOPICVIEW =**

now means *do not deny anyone the right to view this topic*. See "How TWiki evaluates ALLOW/DENY settings" below for more on this.

Controlling access to Attachments

Attachments are referred to directly, and are not normally indirected via TWiki 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 TWiki `viewfile` script. For example,

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

RewriteEngine on
RewriteCond %{REQUEST_URI} !^/+twiki/+pub/+Twiki/+.+
RewriteRule ^/+twiki/+pub/+(^/)+/(((^/)+)+)(.+) /twiki/bin/viewfile/$1/$4?
filename=$5 [L,PT]
```

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

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

How TWiki evaluates ALLOW/DENY settings

When deciding whether to grant access, TWiki 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 a [super-user](#)
 - 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
4. If ALLOWTOPIC is set
 1. people in the list are **PERMITTED**
 2. everyone else is **DENIED**
 - Note that this means that setting ALLOWTOPIC to empty *denies access to everyone except admins* (unless DENYTOPIC is also set to empty, as described above)
5. If DENYWEB is set to a list of wikiname
 - 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**
 - Note that setting ALLOWWEB to empty *denies access to everyone except admins*
7. If you got this far, access is **PERMITTED**

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** variable 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.

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

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 [TWikiUserAuthentication](#) to be enabled.

1. **Restrict** view access to selected Users and Groups. Set one or both of these variables 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 in case DENYWEBVIEW and ALLOWWEBVIEW is not defined.

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 [TWikiUserAuthentication](#) to be enabled.

1. **Restrict** view access to selected Users and Groups. Set one or both of these variables 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 in case DENYWEBVIEW and ALLOWWEBVIEW is not defined.

Hide Control Settings

 **Tip:** To hide access control settings from normal browser viewing, place them in HTML comment markers.

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

Twiki Text Formatting

Working in TWiki 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 TWiki 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.

Twiki Editing Shorthand

Formatting Command:	You write:	You get:
Paragraphs: Blank lines will create new paragraphs.	1st paragraph 2nd paragraph	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% variable. 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	Sushi Maguro Not in TOC
Bold Text: Words get shown in bold by enclosing them in * asterisks.	*Bold*	Bold
Italic Text: Words get shown in <i>italic</i> by enclosing them in _ underscores.	_Italic_	<i>Italic</i>
Bold Italic: Words get shown in <i>bold italic</i> by enclosing them in __ double-underscores.	__Bold italic__	<i>Bold italic</i>
Fixed Font: Words get shown in <code>fixed font</code> by enclosing them in = equal signs.	=Fixed font=	<code>Fixed font</code>
Bold Fixed Font: Words get shown in <code>bold fixed font</code> by enclosing them in double equal signs.	==Bold fixed==	<code>bold fixed</code>

 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.	<code>_This works_, _this does not _</code>	<i>This works,</i> <i>_this does not _</i>																									
Verbatim (Literal) Text: Surround code excerpts and other formatted text with <code><verbatim></code> and <code></verbatim></code> tags.  <code>verbatim</code> tags disable HTML code. Use <code><pre></code> and <code></pre></code> tags instead if you want the HTML code within the tags to be interpreted.  NOTE: Preferences variables (* Set NAME = value) are set within verbatim tags.	<code><verbatim> class CatAnimal { void purr() { <code here> } } </verbatim></code>	<code>class CatAnimal { void purr() { <code here> } }</code>																									
Separator (Horizontal Rule): Three or more three dashes at the beginning of a line..	<code>-----</code>																										
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.	<code>* level 1 * level 2 * back on 1 * A bullet broken over three lines * last bullet</code>	• level 1 ◦ level 2 • back on 1 • A bullet broken over three lines • last bullet																									
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>	Type	Generated Style	Sample Sequence	1.	Arabic numerals	1, 2, 3, 4...	A.	Uppercase letters	A, B, C, D...	a.	Lowercase letters	a, b, c, d...	I.	Uppercase Roman Numerals	I, II, III, IV...	i.	Lowercase Roman Numerals	i, ii, iii, iv...	<code>1. Sushi 1. Dim Sum 1. Fondue A. Sushi A. Dim Sum A. Fondue i. Sushi i. Dim Sum i. Fondue</code>	<code>1. Sushi 2. Dim Sum 3. Fondue A. Sushi B. Dim Sum C. Fondue i. Sushi ii. Dim Sum iii. Fondue</code>							
Type	Generated Style	Sample Sequence																									
1.	Arabic numerals	1, 2, 3, 4...																									
A.	Uppercase letters	A, B, C, D...																									
a.	Lowercase letters	a, b, c, d...																									
I.	Uppercase Roman Numerals	I, II, III, IV...																									
i.	Lowercase Roman Numerals	i, ii, iii, iv...																									
Definition List: Three spaces, a dollar sign, the term, a colon, a space, followed by the definition.	<code>\$ Sushi: Japan \$ Dim Sum: S.F.</code>	Sushi Japan Dim Sum S.F.																									
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 • 2 colspan and multi-span columns with multiple 's right next to each other • ^ cell with caret indicating follow-up row of	*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	<table><tr><th><u>L</u></th><th><u>C</u></th><th><u>R</u></th></tr><tr><td>A2</td><td>B2</td><td>C2</td></tr><tr><td>A3</td><td>B3</td><td>C3</td></tr><tr><td colspan="3">multi span</td></tr><tr><td rowspan="3">A5-7</td><td>5</td><td>5</td></tr><tr><td>six</td><td>six</td></tr><tr><td>seven</td><td>seven</td></tr><tr><td>split</td><td>over</td><td>3 lines</td></tr><tr><td>A9</td><td>B9</td><td>C9</td></tr></table>	<u>L</u>	<u>C</u>	<u>R</u>	A2	B2	C2	A3	B3	C3	multi span			A5-7	5	5	six	six	seven	seven	split	over	3 lines	A9	B9	C9
<u>L</u>	<u>C</u>	<u>R</u>																									
A2	B2	C2																									
A3	B3	C3																									
multi span																											
A5-7	5	5																									
	six	six																									
	seven	seven																									
split	over	3 lines																									
A9	B9	C9																									

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  The 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.  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. It's generally a good idea to use the TWikiVariables % TWIKIWEB% and %MAINWEB% instead of TWiki and Main.	WebStatistics Sandbox.WebNotify Sandbox.WebHome	WebStatistics WebNotify Sandbox
Anchor: You can define a reference inside a TWiki topic (called an anchor name) and link to that. To <i>define</i> an anchor write #AnchorName at the beginning of a line. The anchor name must be a WikiWord. To <i>link to</i> 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	WikiWord#NotThere Jump 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 the initial letter and by removing the spaces; for example, [[text formatting FAQ]] links to topic TextFormattingFAQ. 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.	[[wiki syntax]] [[Main.TWiki users]] escaped: ![[wiki syntax]]	wiki syntax Main.TWiki users escaped: [[wiki syntax]]
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://TWiki.org/) are both supported. The rules described under <i>Forced Links</i> 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]] [[http://gnu.org][GNU]]	wiki syntax GNU
Prevent a Link: Prevent a WikiWord from being linked by prepending it with an exclamation point.	!SunOS	SunOS

Disable Links: You can disable automatic linking of WikiWords by surrounding text with <code><noautolink></code> and <code></noautolink></code> tags.  It is possible to turn off all auto-linking with a NOAUTOLINK preferences setting.	<code><noautolink></code> RedHat & SuSE <code></noautolink></code>	RedHat & SuSE
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 <code>[[mailto:user@domain] [descriptive text]]</code> .	<code>a@b.com</code> <code>[[mailto:a@b.com] \</code> <code>[Mail]]</code> <code>[[mailto:?subject=\</code> <code>Hi] [Hi]]</code>	a@bPLEASENOSPAM.com Mail Hi

Using HTML

You can use just about any HTML tag without a problem. You can add HTML if there is no TWiki equivalent, for example, 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 [TWiki shorthand](#) instead - this keeps the text uncluttered and easy to edit.
- If you use HTML use [XHTML 1.0 Transitional](#) syntax.
-  Script tags may be filtered out, at the discretion of your TWiki administrator.

Recommendations when pasting HTML from other sources:

- Copy only text between `<body>` and `</body>` tags.
- Remove all empty lines. TWiki 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. TWiki might interpret some text as lists.
- Do not span a tag over more than one line. TWiki requires that the opening and closing angle brackets - `< . . . >` - of an 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.

 TWiki converts shorthand notation to HTML for display. To copy a fully marked-up page, simply view the source in your browser and save the contents. If you need to save HTML frequently, you may want to check out [TWiki:Plugins/PublishAddOn](#).

Script tags

You can use HTML `<script>` tags for your TWiki applications. However note that your TWiki administrator can disable `<script>` in topics, and may have chosen to do so for security considerations. TWiki markup and [TWikiVariables](#) are **not** expanded inside script tags.

Hyperlinks

Being able to create links without any special formatting is a core TWiki 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

- `http://...`, `https://...`, `ftp://...`, `gopher://...`, `news://...`, `file://...`, `telnet://...` and `mailto:...@...` 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](#).

TWiki Variables

TWiki Variables are names that are enclosed in percent signs % that are expanded on the fly. Some variables take arguments, such as %INCLUDE%. For those variables, the arguments are included in curly braces ({ and }).

<u>Variable</u>	<u>In brief</u>	<u>Full documentation</u>
%TOC%	Automatically generates a table of contents based on headings in a topic - see the top of this page for an example.	VarTOC
%WEB%	The current web, is TWiki04 .	VarWEB
%TOPIC%	The current topic name, is TWikiDocumentation .	VarTOPIC
%ATTACHURL%	The attachment URL of the current topic. Example usage: If you attach a file to a topic you can refer to it as %ATTACHURL%/image.gif to show the URL of the file or the image in your text.	VarATTACHURL
%INCLUDE {"SomeTopic"}%	Server side include, includes another topic. The current web is the default web. Example: %INCLUDE{"TWiki04.SiteMap"}%	VarINCLUDE
%SEARCH{"sushi"}%	Inline search showing the search result embedded in a topic. FormattedSearch gives you control over formatting, useful for creating web-based applications.	VarSEARCH

[TWikiPreferences](#) defines some site-wide variables. Among them are:

- **Line break:** Write %BR% to start a new line.
- **Colored text:** Write: %RED% Red %ENDCOLOR% and %BLUE% blue %ENDCOLOR% colors to get: Red and blue colors.

There are many more variables. To see them all, go to [TWikiVariables](#).

Documentation Graphics: There are many graphics available to use in your topics. Use %ICON{"help"}%, %ICON{"tip"}|%, and %icon{"warning"}% to get: , , and . To see all of the graphics available, see [TWikiDocGraphics](#).

 To "escape" a variable, prefix it with an exclamation mark. Write: !%SOMEVARIABLE% to get: %SOMEVARIABLE%.

TWikiPlugin Formatting Extensions

Plugins can extend the functionality of TWiki into many other areas. There are a huge number of TWiki plugins available from the [Plugins](#) web on TWiki.org.

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

- [SpreadSheetPlugin](#) (Dakar, 8154): Add spreadsheet calculation like "\$SUM(\$ABOVE())" to tables located in TWiki topics.
- [CommentPlugin](#) (Dakar, 8164): Allows users to quickly post comments to a page without an edit/preview/save cycle.

- [BlackListPlugin](#) (any TWiki, 9979): Utility to keep malicious users away from a public TWiki site
- [ChartPlugin](#) (1.401): Create PNG or GIF charts to visualize TWiki tables
- [EditTablePlugin](#) (Dakar, 8154): Edit TWiki tables using edit fields, date pickers and drop down boxes
- [GaugePlugin](#) (1.003): Build dashboards that contain graphical images of gauges defined with %GAUGE{ }% variables.
- [GoogleAjaxSearchPlugin](#) (Dakar, \$Rev: 11099\$): Dynamic Google AJAX search service for public TWiki sites
- [InterwikiPlugin](#) (Dakar, \$Rev: 8329\$): Link **ExternalSite:Page** text to external sites based on aliases defined in a rules topic
- [LocalCityTimePlugin](#) (1.011): Shows the local time of a city embedded in a TWiki topic.
- [PerlDocPlugin](#) (1.001): Extract the Perl documentation (POD) from a Perl module and display it in a topic.
- [PreferencesPlugin](#) (Dakar, 9610): Allows editing of preferences using fields predefined in a form
- [RenderListPlugin](#) (Dakar, \$Rev: 9598\$): Render bullet lists in a variety of formats
- [SlideShowPlugin](#) (Dakar, \$Rev: 8154\$): Create web based presentations based on topics with headings.
- [SmiliesPlugin](#) (Dakar, 8154): Render smilies as icons, like : -) for ☺ or :cool: for :cool:
- [TWikiDrawPlugin](#) (Dakar, 8154): Java Applet based drawing editor
- [TWikiOrgPlugin](#) (1.001): TWiki.org specific extensions
- [TablePlugin](#) (Dakar, 8154): Control attributes of tables and sorting of table columns
- [TagMePlugin](#) (Any TWiki, 1.031): Tag wiki content collectively to find content by keywords
- [VarCachePlugin](#) (Dakar, 8154): Cache TWiki variables in selected topics for faster page rendering
- [WysiwygPlugin](#) (Dakar, 9565): Translator framework and WYSIWYG editor for TWiki topics

Check on current Plugin status and settings for this site in [TWikiPreferences](#).

Common Editing Errors

TWiki formatting rules are fairly simple to use and quick to type. However, there are some things to watch out for, taken from the [TextFormattingFAQ](#):

- **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'.

TWiki Variables

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

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

1. Preferences variables: Can be defined and changed by the user
2. Predefined variables: Defined by the TWiki system or by Plugins (for example, the [SpreadSheetPlugin](#) introduces a %CALC{ }% variable)

Using Variables

To use a variable type its name. For example,

- type %T% to get  (a preferences variable)

- type `%TOPIC%` to get `TwikiVariables` (a predefined variable)
- type `%CALC{ "$UPPER(Text)" }` to get `TEXT` (a variable defined by Plugin)

Note:

- To leave a variable unexpanded, precede it with an exclamation point, e.g. type `!%TOPIC%` to get `%TOPIC%`
- Variables 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 variables defined for a particular topic

Variable Names

Variable 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 characteres. E.g. `%MYVAR%`, `%MyVar%`, `%My2ndVar%`, and `%My_Var%` are all valid variable names. Variables are case sensitive. `%MyVAR%` and `%MYVAR%` are not the same variable.

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

Preferences Variables

Unlike predefined variables, preferences variables can be defined by the user in various places.

Setting Preferences Variables

You can set variables in all the following places:

1. local site level in [TWikiPreferences](#)
2. user level in individual user topics in Main web
3. web level in [WebPreferences](#) of each web
4. topic level in topics in webs
5. plugin topics (see [TWikiPlugins](#))
6. session variables (if sessions are enabled)

Settings at higher-numbered levels override settings of the same variable at lower numbered levels, unless the variable 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.

The syntax for setting Variables is the same anywhere in TWiki (on its own TWiki bullet line, including nested bullets):
`[multiple of 3 spaces] * [space] Set [space] VARIABLENAME [space] = [space] value`

Examples:

- **Set VARIABLENAME = value**
 - **Set VARIABLENAME = 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 VARIABLENAME = value starts here
and continues here

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

Example: Create a custom logo variable

- To place a logo anywhere in a web by typing `%MYLOGO%`, define the Variable 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 variable setting in [WebPreferences](#):

- **Set MYLOGO = %PUBURL%/ %WEB%/LogoTopic/mylogo.gif**

You can also set preferences variables on 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 Variables

These are special types of preferences variables to control access to content. [TWikiAccessControl](#) explains these security settings in detail.

Local values for variables

Certain topics (a users home topic, web site and default preferences topics) have a problem; variables 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 variable 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 variables in their evaluation order, so you can see variable scope if you get confused.

Frequently Used Preferences Variables

The following preferences variables are frequently used. They are defined in [TWikiPreferences#Miscellaneous Settings](#):

- `%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

There are additional useful preferences variables defined in [TWikiPreferences](#), in [Main.TWikiPreferences](#), and in [WebPreferences](#) of every web.

Predefined Variables

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

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

This version of TWiki - Fri, 31 Mar 2006 build 9623 - predefines the following variables:

ACTIVATEDPLUGINS -- list of currently activated plugins

- Syntax: %ACTIVATEDPLUGINS%
- Expands to: [SpreadSheetPlugin](#), [CommentPlugin](#), [BlackListPlugin](#), [ChartPlugin](#), [EditTablePlugin](#), [GaugePlugin](#), [GoogleAjaxSearchPlugin](#), [InterwikiPlugin](#), [LocalCityTimePlugin](#), [PerlDocPlugin](#), [PreferencesPlugin](#), [RenderListPlugin](#), [SlideShowPlugin](#), [SmiliesPlugin](#), [TWikiDrawPlugin](#), [TWikiOrgPlugin](#), [TablePlugin](#), [TagMePlugin](#), [VarCachePlugin](#), [WysiwygPlugin](#)
- Related: [PLUGINDESCRIPTIONS](#), [FAILEDPLUGINS](#), [PLUGINVERSION](#)

ALLVARIABLES -- list of currently defined TWikiVariables

- Syntax: %ALLVARIABLES%
- Expands to: a table showing all defined [TWikiVariables](#) in the current context

ATTACHURL -- full URL for attachments in the current topic

- Syntax: %ATTACHURL%
- Expands to: <http://twiki.org/p/pub/TWiki04/VarATTACHURL>
- Example: If you attach a file you can refer to it as %ATTACHURL%/image.gif
- Related: [ATTACHURLPATH](#), [PUBURLPATH](#), [SCRIPTURL](#), [FileAttachments](#)

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

- Syntax: %ATTACHURLPATH%
- Expands to: /p/pub/TWiki04/VarATTACHURLPATH
- Related: [ATTACHURL](#), [PUBURL](#), [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 [LoginName](#). (Typically First name and last name, no space, no dots, capitalized, e.g. JohnSmith, unless you chose otherwise). Visit [TWikiRegistration](#) if you do not have one.
- Related: [TWikiUserAuthentication](#), [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
- 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.

- Syntax: %BASEWEB%
- Related: [BASETOPIC](#), [INCLUDINGWEB](#), [INCLUDE](#), [WEB](#)

DATE -- signature format date

- Syntax: %DATE%
- Expands to: 16 Oct 2006
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create a new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details.
- Related: [DISPLAYTIME](#), [GMTIME{"format"}](#), [SERVERTIME](#)

DISPLAYTIME -- display time

- Syntax: %DISPLAYTIME%
- Expands to: 16 Oct 2006 - 09:44
- Related: [DISPLAYTIME{"format"}](#), [GMTIME](#), [SERVERTIME](#)

DISPLAYTIME{"format"} -- formatted display time

- Formatted time - either GMT or Local server time, depending on setting in [configure](#). Same format qualifiers as %GMTIME%
- Syntax: %DISPLAYTIME{"format"}%
- Example: %DISPLAYTIME{"\$hou:\$min"}% expands to 09:44
- Related: [DISPLAYTIME](#), [GMTIME](#), [SERVERTIME](#)

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 (")
 - TWiki special characters "%", "[", "]", "@", "_", "*", "=", and "|"
- Syntax: %ENCODE{"string"}%
- Supported parameters:

<u>Parameter:</u>	<u>Description:</u>	<u>Default:</u>
"string"	String to encode	required (can be empty)
type="entity"	Encode special characters into HTML entities, like a double quote into "	URL encoding
type="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
-  **Note:** Values of HTML input fields must be entity encoded, for example:
- Related: [URLPARAM](#)

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

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

<u>Parameter:</u>	<u>Description:</u>
"name"	Name of the section.
type="..."	Type of the section being terminated; supported types "section", "include", "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](#)

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

- Syntax: %FAILEDPLUGINS%
- Expands to: See [TWikiPlugins#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 TWiki 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 \$title expands to the field title	"\$value"
default="..."	Text shown when no value is defined for the field	""
alttext="..."	Text shown when field is not found in the form	""

- Example: %FORMFIELD{"ProjectName" topic="Projects.SushiProject" default="(not set)" alttext="ProjectName field found"}%
- Related: [SEARCH](#)

GMTIME -- GM time

- Syntax: %GMTIME%
- Expands to: 16 Oct 2006 - 09:44
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create a new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details.
- Related: [DISPLAYTIME](#), [GMTIME{"format"}](#), [SERVERTIME](#)

GMTIME{"format"} -- formatted GM time

- Syntax: %GMTIME{"format"}%
- Supported variables:

Variable:	Unit:	Example
\$seconds	seconds	59
\$minutes	minutes	59
\$hours	hours	23
\$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	month in ISO format	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	2006-10-16T09:44:32Z
\$rcs	RCS format timestamp	2006/10/16 09:44:32
\$http	E-mail & http format timestamp	Mon, 16 Oct 2006 09:44:32 GMT

\$epoch	Number of seconds since 00:00 on 1st January, 1970	1160991872
---------	--	------------

- Variables can be shortened to 3 characters
- Example: %GMTIME{"\$day \$month, \$year - \$hour:\$min:\$sec"}% expands to 16 Oct, 2006 - 09:44:32
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create a new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details.
- Related: [DISPLAYTIME](#), [GMTIME](#), [SERVERTIME](#)

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"}%	de-at
-----------------------------	-------

%HTTP{"User - Agent"}%	Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET CLR 1.1.4322; .NET CLR 2.0.50727)
------------------------	--

-  **Note:** 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: twiki.org
- Related: [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](#)

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

- Generates the HTML img tag of a small graphic image attached to [TWikiDocGraphics](#). 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://twiki.org/doc/xhtmll.xml"}% 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](#), [TWikiPreferences](#), [FileAttachments](#), [TWikiDocGraphics](#)

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

- Generates the full URL of a [TWikiDocGraphics](#) image, which TWiki 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 http://twiki.org/p/pub/TWiki04/TWikiDocGraphics/arrowbright.gif
 - %ICONURL{"novel.pdf"}% returns http://twiki.org/p/pub/TWiki04/TWikiDocGraphics/pdf.gif
 - %ICONURL{"/queen/boheme.mp3"}% returns http://twiki.org/p/pub/TWiki04/TWikiDocGraphics/mp3.gif
- Related: [ICONURLPATH](#), [ICON](#), [TWikiPreferences](#), [FileAttachments](#), [TWikiDocGraphics](#)

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

- Generates the URL path of a [TWikiDocGraphics](#) 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 /p/pub/TWiki04/TWikiDocGraphics/locktopic.gif
 - %ICONURLPATH{"eggysmell.xml"}% returns /p/pub/TWiki04/TWikiDocGraphics/xml.gif
 - %ICONURLPATH{"/doc/xhtml.xsl"}% returns /p/pub/TWiki04/TWikiDocGraphics/xsl.gif
- Related: [ICONURL](#), [ICON](#), [TWikiPreferences](#), [FileAttachments](#), [TWikiDocGraphics](#)

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=" is not defined"}% renders as ==
- Related: [\\$IF\(\)](#) of [SpreadSheetPlugin](#)

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

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

Parameter:	Description:	Default:
"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{"TWiki04.SiteMap"}%	
"http://..."	A full qualified URL, i.e. %INCLUDE{"http://twiki.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 <i>automatically</i> translate to a server-side include.	
pattern="..."	A RegularExpression pattern to include a subset of a topic or page	none
rev="2"	Include a previous topic revision; N/A for URLs	top revision

raw="on"	When a page is included, normally TWiki 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 tags spanning multiple lines. If you prefer to include <i>exactly</i> what is in the source of the originating page set this to on.	disabled
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)	%INCLUDEWARNING% preferences setting
section="name"	Includes only the specified named section, as defined in the included topic by the STARTSECTION and ENDSECTION variables	
PARONE="val 1" PARTWO="val 2"	Any other parameter will be defined as a variable 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.	

- **Note:** JavaScript in included webpages is filtered out as a security precaution per default (disable filter with raw 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
- 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.
- 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 TWiki Internationalization (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 TWiki languages

- List the languages available (as PO files) to TWiki. Those are the languages in which TWiki's user interface is available.
- Syntax: %LANGUAGES{ . . . }%
- Supported parameters:

<u>Parameter:</u>	<u>Description:</u>	<u>Default:</u>
format	format for each item. See below for variables 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 variables:

<u>Variable</u>	<u>Meaning</u>
-----------------	----------------

\$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

LOCALSITEPREFS -- web.topicname of site preferences topic

- The full name of the local site preferences topic. This topic is read for preferences before TWiki04.%TWIKIPREFSTOPIC% is read.
- Syntax: %LOCALSITEPREFS%
- Expands to: Main.TWikiPreferences, renders as [TWikiPreferences](#)

LOGIN -- present a full login link

- Syntax: %LOGIN%
- Expand to:  [Log In](#)
- Related: [TWikiUserAuthentication](#), [SESSIONID](#), [SESSIONVAR](#), [LOGOUT](#), [SESSION_VARIABLE](#)

LOGOUT -- present a full logout link

- Syntax: %LOGOUT%
- Expand to:
- Related: [TWikiUserAuthentication](#), [SESSIONID](#), [SESSIONVAR](#), [LOGIN](#), [SESSION_VARIABLE](#)

MAINWEB -- name of Main web

- The web containing [TWikiUsers](#), individual user topics and [TWikiGroups](#)
- Syntax: %MAINWEB%
- Expands to: Main
- Related: [TWIKIWEB](#)

MAKETEXT -- creates text using TWiki's l18n infrastructure

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

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

- 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 [peter@structuredwikisPLEASENOSPAM.com](#).
 - %MAKETEXT{"Did you want to [[[[_1]]][reset [_2]'s password]]?" args="%TWIKIWEB%. ResetPassword, %WIKIUSERNAME%"}%
expands to
Did you want to [reset Main.TWikiGuest's password](#)?
- **Notes:**
 - TWiki 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='twikiAccessKey'>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 %VARIABLES% inside the translatable strings (since they will get expanded **before** the %MAKETEXT{ . . . }% itself is handled).

META -- displays meta-data

- Provided mainly for use in templates, this variable 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 FormattedSearch for \$formfield	Show a single form field
"form"	none	Generates the table showing the form fields. See Form Templates
"attachments"	all="on" to show hidden attachments	Generates the table showing the attachments
"moved"	none	Details of any topic moves
"parent"	dontrecurse="on" : By default recurses up tree, this has some cost. nowebhome="on" : Suppress WebHome. prefix=" . . . " : Prefix that goes before parents, but only if there are parents, default "". suffix=" . . . " : Suffix, only appears if there are parents, default "". separator=" . . . " : Separator between parents, default is " > ".	Generates the parent link

- 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	current topic
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
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](#)

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

- Syntax: %NOP%
 - In normal topic text, expands to <nop>, which prevents expansion of adjacent variables 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).
 -  **Note:** This is deprecated. Do not use it. Use %STARTSECTION{type="templateonly"}%..%ENDSECTION{type="templateonly"}% instead (see [TWikiTemplates](#) for more details).
- Related: [STARTSECTION](#), [TWikiTemplates](#)

NOTIFYTOPIC -- name of the notify topic

- Syntax: %NOTIFYTOPIC%
- Expands to: WebNotify, renders as [WebNotify](#)
- Related: [HOMETOPIC](#), [STATISTICSTOPIC](#), [TOPIC](#)

PLUGINDESCRIPTIONS -- list of plugin descriptions

- Syntax: %PLUGINDESCRIPTIONS%
- Expands to:
 - [SpreadSheetPlugin](#) (Dakar, 8154): Add spreadsheet calculation like "\$SUM(\$ABOVE())" to tables located in TWiki topics.
 - [CommentPlugin](#) (Dakar, 8164): Allows users to quickly post comments to a page without an edit/preview/save cycle.
 - [BlackListPlugin](#) (any TWiki, 9979): Utility to keep malicious users away from a public TWiki site
 - [ChartPlugin](#) (1.401): Create PNG or GIF charts to visualize TWiki tables
 - [EditTablePlugin](#) (Dakar, 8154): Edit TWiki tables using edit fields, date pickers and drop down boxes
 - [GaugePlugin](#) (1.003): Build dashboards that contain graphical images of gauges defined with %GAUGE{%} variables.
 - [GoogleAjaxSearchPlugin](#) (Dakar, \$Rev: 11099\$): Dynamic Google AJAX search service for public TWiki sites
 - [InterwikiPlugin](#) (Dakar, \$Rev: 8329\$): Link **ExternalSite:Page** text to external sites based on aliases defined in a rules topic
 - [LocalCityTimePlugin](#) (1.011): Shows the local time of a city embedded in a TWiki topic.
 - [PerlDocPlugin](#) (1.001): Extract the Perl documentation (POD) from a Perl module and display it in a topic.
 - [PreferencesPlugin](#) (Dakar, 9610): Allows editing of preferences using fields predefined in a form
 - [RenderListPlugin](#) (Dakar, \$Rev: 9598\$): Render bullet lists in a variety of formats
 - [SlideShowPlugin](#) (Dakar, \$Rev: 8154\$): Create web based presentations based on topics with headings.
 - [SmiliesPlugin](#) (Dakar, 8154): Render smilies as icons, like : -) for  or :cool: for :cool:
 - [TWikiDrawPlugin](#) (Dakar, 8154): Java Applet based drawing editor
 - [TWikiOrgPlugin](#) (1.001): TWiki.org specific extensions
 - [TablePlugin](#) (Dakar, 8154): Control attributes of tables and sorting of table columns
 - [TagMePlugin](#) (Any TWiki, 1.031): Tag wiki content collectively to find content by keywords
 - [VarCachePlugin](#) (Dakar, 8154): Cache TWiki variables in selected topics for faster page rendering
 - [WysiwygPlugin](#) (Dakar, 9565): Translator framework and WYSIWYG editor for TWiki topics
- Related: [ACTIVATEDPLUGINS](#), [FAILEDPLUGINS](#), [PLUGINVERSION](#)

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

- Syntax: %PLUGINVERSION{"name"}% to get the version of a specific plugin
- Example: %PLUGINVERSION{"InterwikiPlugin"}% expands to \$Rev: 8329\$
- Syntax: %PLUGINVERSION% to get the version of the API
- Expands to: 1.1
- Related: [WIKIVERSION](#), [ACTIVATEDPLUGINS](#), [FAILEDPLUGINS](#), [PLUGINDESCRIPTIONS](#)

PUBURL -- the base URL of attachments

- Syntax: %PUBURL%
- Expands to: <http://twiki.org/p/pub>
- Example: You can refer to a file attached to another topic with %PUBURL%/WEB%/OtherTopic/image.gif
- Related: [ATTACHURL](#), [PUBURLPATH](#), [SCRIPTURL](#), [SCRIPTURLPATH](#), [FileAttachments](#)

PUBURLPATH -- the base URL path of attachments

- Syntax: %PUBURLPATH%
- Expands to: /p/pub
- Related: [ATTACHURL](#), [PUBURL](#), [SCRIPTURL](#), [SCRIPTURLPATH](#), [FileAttachments](#)

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.
-  **Note:** 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 %URLPARAM{%}.
- Syntax: %QUERYSTRING%
- Expands to: `template=viewprint`
- Related: [URLPARAM](#)

REMOTE_ADDR -- environment variable

- Syntax: %REMOTE_ADDR%
- Expands to: 193.80.173.13
- Related: [HTTP_HOST](#), [REMOTE_PORT](#), [REMOTE_USER](#)

REMOTE_PORT -- environment variable

- Syntax: %REMOTE_PORT%
- Expands to: 27344
- Related: [HTTP_HOST](#), [REMOTE_ADDR](#), [REMOTE_USER](#)

REMOTE_USER -- environment variable

- Syntax: %REMOTE_USER%
- Expands to:
- Related: [HTTP_HOST](#), [REMOTE_ADDR](#), [REMOTE_PORT](#), [USERNAME](#), [WIKINAME](#), [WIKIUSERNAME](#)

REVINFO -- revision information of current topic

- Syntax: %REVINFO%
- Expands to: r0 - 27 Mar 2005 - 13:14:15 - [TWikiContributor](#)
- Related: [REVINFO{"format"}](#)

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

- Syntax: %REVINFO{"format"}%
- Supported parameters:

<u>Parameter:</u>	<u>Description:</u>	<u>Default:</u>
"format"	Format of revision information, see supported variables 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 variables in format:

<u>Variable:</u>	<u>Unit:</u>	<u>Example</u>
\$web	Name of web	Current web
\$topic	Topic name	Current topic
\$rev	Revision number. Prefix r1. to get the usual r1.5 format	5
\$date	Revision date	11 Jul 2004
\$time	Revision time	23:24:25
\$username	Login username of revision	jsmith
\$wikiname	WikiName of revision	JohnSmith
\$wikiusername	WikiName with Main web prefix	Main. JohnSmith

- Example: %REVINFO{"\$date - \$wikiusername" rev="1.1"}% returns revision info of first revision
- Related: [REVINFO](#)

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: view
- Related: [SCRIPTSUFFIX](#), [SCRIPTURL](#), [SCRIPTURLPATH](#)

SCRIPTSUFFIX -- script suffix

- Some TWiki installations require a file extension for CGI scripts, such as .pl or .cgi
- Syntax: %SCRIPTSUFFIX%
- Expands to:
- Related: [SCRIPTNAME](#), [SCRIPTURL](#), [SCRIPTURLPATH](#)

SCRIPTURL -- base URL of TWiki scripts

- Syntax: %SCRIPTURL%
- Expands to: http://twiki.org/cgi-bin
- Related: [PUBURL](#), [SCRIPTNAME](#), [SCRIPTSUFFIX](#), [SCRIPTURL{"script"}](#), [SCRIPTURLPATH](#)

SCRIPTURL{"script"} -- URL of TWiki script

- Syntax: %SCRIPTURL{"script"}%
- Expands to: http://twiki.org/cgi-bin/script
- Example: To get the authenticated version of the current topic you can write %SCRIPTURL{"viewauth"}%/%WEB%/TOPIC% which expands to http://twiki.org/cgi-bin/viewauth/TWiki04/TWikiVariables
-  **Note:** In most cases you should use %SCRIPTURLPATH{"script"}% instead, as it works with URL rewriting much better
- Related: [PUBURL](#), [SCRIPTNAME](#), [SCRIPTSUFFIX](#), [SCRIPTURL](#), [SCRIPTURLPATH](#), [SCRIPTURLPATH{"script"}](#)

SCRIPTURLPATH -- base URL path of TWiki scripts

- As %SCRIPTURL%, but doesn't include the protocol and host part of the URL
- Syntax: %SCRIPTURLPATH%
- Expands to: /cgi-bin
- Related: [PUBURLPATH](#), [SCRIPTNAME](#), [SCRIPTSUFFIX](#), [SCRIPTURL](#), [SCRIPTURLPATH{"script"}](#)

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

- As %SCRIPTURL{"script"%}, but doesn't include the protocol and host part of the URL
- Syntax: %SCRIPTURLPATH{"script"%}
- Expands to: /cgi-bin/script
- Related: [PUBURLPATH](#), [SCRIPTNAME](#), [SCRIPTSUFFIX](#), [SCRIPTURL](#), [SCRIPTURL{"script"}](#), [SCRIPTURLPATH](#)

SEARCH{"text"} -- search content

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

<u>Parameter:</u>	<u>Description:</u>	<u>Default:</u>
"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
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 variable set to on in their WebPreferences . Note that TWikiAccessControls 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
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.	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 TWikiForms . 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 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 TimeInterval .	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	Show topic summary
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, 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="..."	Custom format results: see FormattedSearch for usage, variables & examples	Results in table
expandvariables="on"	Expand variables 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 variable 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 hits	Newline "\$n"
newline="%BR%"	Line separator <i>within</i> a search hit. Useful if the format="" parameter contains a \$pattern() that captures more than one line, i.e. contents of a textfield in a form.	"\$n" (Newline)

- 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](#))

-  Hint: If the [TWiki:Plugins.TablePlugin](#) is installed, you may set a `%TABLE{}%` variable just before the `%SEARCH{}%` to alter the output of a search. Example: `%TABLE{ tablewidth="90%" }%`
- Related: [METASEARCH](#), [TOPICLIST](#), [WEBLIST](#), [FormattedSearch](#)

SERVERTIME -- server time

- Syntax: `%SERVERTIME%`
- Expands to: 16 Oct 2006 - 02:44
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create a new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details.
- Related: [DISPLAYTIME](#), [GMTIME](#), [SERVERTIME{"format"}](#)

SERVERTIME{"format"} -- formatted server time

- Same format qualifiers as `%GMTIME%`
- Syntax: `%SERVERTIME{"format"}%`
- Example: `%SERVERTIME{"$hou:$min"}%` expands to 02:44
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create a new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details.
- Related: [DISPLAYTIME](#), [GMTIME](#), [SERVERTIME](#)

SESSIONID -- unique ID for this session

- Syntax: `%SESSIONID%`
- Expand to: 650d7aedfbdb7b67bbea7dfa6cc8307
- Related: [TWikiUserAuthentication](#), [AUTHREALM](#), [SESSIONVAR](#), [LOGIN](#), [LOGOUT](#), [SESSION_VARIABLE](#)

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

- Syntax: `%SESSIONVAR%`
- Expand to: TWIKISID
- Related: [TWikiUserAuthentication](#), [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=""}%`
-  Hint: The users ID is in the AUTHUSER session variable, and is read-only
- Related: [TWikiUserAuthentication](#), [AUTHREALM](#), [SESSIONID](#), [SESSIONVAR](#), [LOGIN](#), [LOGOUT](#)

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`
-  **Note:** This is a deprecated variable. 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: Twiki Variables
- Supported parameters:

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

-  Hint: 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% variable. A normal view of the topic shows everything except the %STARTINCLUDE% variable itself.
- **Note:** 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="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 [TWikiTemplates](#) for more information.
- Syntax: %STARTSECTION{"name"}% %ENDSECTION{"name"}%
- Syntax: %STARTSECTION{type="include"}% %ENDSECTION{type="include"}%
- Syntax: %STARTSECTION{type="templateonly"}% ... %ENDSECTION{type="templateonly"}%
- Supported parameters:

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

-  **Note:** 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..
-  **Note:** You can define nested sections. It is not recommended to overlap sections, although it is valid in TWiki. 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 everything except the %STOPINCLUDE% variable itself.
- Syntax: %STOPINCLUDE%

- Related: [INCLUDE](#), [STARTINCLUDE](#)

TOC -- table of contents of current topic

- Syntax: %TOC%
- Related: [TOC{"Topic"}](#)

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 ("

- Syntax: %TOC{"SomeTopic" ...}% - Supported parameters:

<u>Parameter:</u>	<u>Description:</u>	<u>Default:</u>
"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{"TWikiDocumentation" web="Twiki04" title="Contents:"}%
- Example: see [TWiki:Sandbox.TestTopicInclude](#)
-  Hint: TOC will generate links to the headings, so when a reader clicks on a heading it will jump straight where that heading is anchored in the text. If you have two headings with exactly the same text, then their anchors will also be identical and they won't be able to jump to them. To make the anchors unique, you can add an invisible HTML comment to the text of the heading. This will be hidden in normal view, but will force the anchors to be different. For example, - - + Heading <!-- 5 - ->.
- Related: [TOC](#)

TOPIC -- name of current topic

- Syntax: %TOPIC%
- Expands to: TWikiVariables, renders as [TWikiVariables](#)
- 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 variables: The \$name variable gets expanded to the topic name, \$qname to double quoted name, \$marker to marker parameter where topic matches selection, and \$web to the name of the web.
- Syntax: %TOPICLIST{"format" ...}%
- Supported parameters:

<u>Parameter:</u>	<u>Description:</u>	<u>Default:</u>
"format"	Format of one line, may include \$web (name of web), \$name (name of the topic), \$qname (name of topic in double quotes), \$marker (which expands to marker for the item matching selection only)	"\$name"
format="format"	(Alternative to above)	"\$name"
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.\$name"}% creates a bullet list of all topics
- Example: %TOPICLIST{separator=", "}% creates a comma separated list of all topics
- Example: %TOPICLIST{" <option>\$name</option>"}% creates an option list (for drop down menus)
- Example: <select>%TOPICLIST{" <option \$marker value='\$name'>\$name</option>" separator=" " selection="%TOPIC"%}%</select> creates an option list of web topics with the current topic selected
- Related: [SEARCH](#), [WEBLIST](#)

TWIKIWEB -- name of TWiki documentation web

- The web containing all documentation and site-wide preference settings for TWiki
- Syntax: %TWIKIWEB%
- Expands to: TWiki04
- Related: [MAINWEB](#)

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="entity"	Encode special characters into HTML entities. See ENCODE for more details.	no encoding
encode="url"	Encode special characters for URL parameter use, like a double quote into %22	no encoding
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/TWiki04/TWikiVariables?skin=print URL
-  **Note:** URL parameters passed into HTML form fields must be entity [ENCODEd](#)
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create a new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details.
-  **Note:** There is a risk that this variable could be misused for cross-site scripting.
- Related: [ENCODE](#), [SEARCH](#), [FormattedSearch](#), [QUERYSTRING](#)

USERINFO - retrieve details about the logged in user

- By default, the retrieved info will be formatted as a comma-separated list comprising the username, wikiusername, and emails.
- Syntax: %USERINFO%
- Expands to: =guest, [TWikiGuest](#), =
- you can also use the format parameter to get different formatted results:
- Syntax: %USERINFO{format="\$username is really \$wikiname"}%
- Expands to guest is really [TWikiGuest](#)?
- The tokens \$emails, \$username, \$wikiname, \$wikiusername, and \$groups are available for use in the format string.
- Related: [USERNAME](#), [WIKINAME](#), [WIKIUSERNAME](#), [TWikiUserAuthentication](#), [ChangeEmailAddress](#)

USERNAME -- your login username

- TWiki makes names available in three formats: USERNAME like jsmith, WIKINAME like JohnSmith and WIKIUSERNAME like Main.JohnSmith. Un-authenticated users are all [TWikiGuest](#).
- Syntax: %USERNAME%

- Expands to: `guest`
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create a new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details.
- Related: [REMOTE_USER](#), [USERINFO](#), [WIKINAME](#), [WIKIUSERNAME](#), [TWikiUserAuthentication](#)

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](#)

WEB -- name of current web

- Syntax: `%WEB%`
- Expands to: `Twiki04`
- Related: [BASEWEB](#), [INCLUDINGWEB](#), [TOPIC](#)

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

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

<u>Parameter:</u>	<u>Description:</u>	<u>Default:</u>
"format"	Format of one line, may include <code>\$name</code> (the name of the web), <code>\$qname</code> (the name of the web in double quotes), <code>\$indentedname</code> (the name of the web with parent web names replaced by indents, for use in indented lists), and <code>\$marker</code> (which expands to marker for the item matching selection only)	"\$name"
format="format"	(Alternative to above)	"\$name"
separator=", "	line separator	"\$n" (new line)
webs="public"	comma separated list of webs, <code>public</code> expands to all non-hidden	"public"
marker="selected"	Text for <code>\$marker</code> if the item matches selection	"selected"
selection="%WEB %"	Current value to be selected in list	section="%WEB %"

- Example: `%WEBLIST{" * [[ $name.WebHome ] ]"}%` creates a bullet list of all webs.
- Example: `%WEBLIST{"<option $marker value=$qname>$name</option>" webs="Trash, public" selection="Twiki04" separator=" "}"` creates a dropdown of all public webs + Trash web, with the current web highlighted.
- Related: [TOPICLIST](#), [SEARCH](#)

WEBPREFSTOPIC -- name of web preferences topic

- Syntax: `%WEBPREFSTOPIC%`
- Expands to: `WebPreferences`, renders as [WebPreferences](#)
- Related: [HOMETOPIC](#), [WIKIPREFSTOPIC](#), [VAR](#)

WIKIHOMEURL -- site home URL deprecated

-  **Note:** use `%WIKILOGOURL%` defined in [WebPreferences](#) instead.

WIKINAME -- your Wiki username

- The [WikiName](#) is the same as %USERNAME% if not defined in the [TWikiUsers](#) topic
- Syntax: %WIKINAME%
- Expands to: TWikiGuest
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details.
- Related: [REMOTE_USER](#), [USERINFO](#), [USERNAME](#), [WIKIUSERNAME](#), [WIKIUSERSTOPIC](#)

WIKIPREFSTOPIC -- name of site-wide preferences topic

- Syntax: %WIKIPREFSTOPIC%
- Expands to: TWikiPreferences, renders as [TWikiPreferences](#)
- Related: [HOMETOPIC](#), [WEBPREFSTOPIC](#)

WIKITOOLNAME -- name of your TWiki site

- Syntax: %WIKITOOLNAME%
- Expands to: TWiki
- Related: [WIKIHOMEURL](#), [WIKIVERSION](#)

WIKIUSERNAME -- your Wiki username with web prefix

- Your %WIKINAME% with Main web prefix, useful to point to your TWiki home page
- Syntax: %WIKIUSERNAME%
- Expands to: Main.TWikiGuest, renders as [TWikiGuest](#)
-  **Note:** When used in a template topic, this variable will be expanded when the template is used to create a new topic. See [TWikiTemplates#TemplateTopicsVars](#) for details
- Related: [REMOTE_USER](#), [USERINFO](#), [USERNAME](#), [WIKINAME](#)

WIKIUSERSTOPIC -- name of topic listing all registers users

- Syntax: %WIKIUSERSTOPIC%
- Expands to: TWikiUsers, with Main prefix renders as [TWikiUsers](#)
- Related: [WIKIUSERNAME](#)

WIKIVERSION -- the version of the installed TWiki engine

- Syntax: %WIKIVERSION%
- Expands to: Fri, 31 Mar 2006 build 9623
- Related: [PLUGINVERSION](#), [WIKITOOLNAME](#)

TWiki 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 variables, 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:* |"

2. format=". . ." parameter

Use the format parameter to specify the format of one search hit.

Example: format="| \$topic | \$summary |"

Variables that can be used in the format string:

<u>Name:</u>	<u>Expands To:</u>
\$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. 16 Oct 2006 - 09:44
\$isodate	Time stamp of last topic update, e.g. 2006-10-16T09:44Z
\$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 %ALLTWIKI{ . . . }% variables shown as ALLTWIKI{ . . . }
\$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 TWikiForm
\$formfield(name, 10)	Form field value, "- " hyphenated each 10 characters
\$formfield(name, 20, -)	Form field value, hyphenated each 20 characters with separator "- "
\$formfield(name, 30, ...)	Form field value, shortended to 30 characters with ". . ." indication

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 occurrence of the Email bullet; use greedy .* patterns to scan for the last occurrence
- 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

\$pattern(reg-exp)

\$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.

\$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 variable gets removed; useful for nested search

\$quot

Double quote ("). Alternatively write \" to escape it

\$percnt

Percent sign (%)

\$dollar

Dollar sign (\$)

Examples

Bullet list showing topic name and summary

Write this:

```
%SEARCH{ "FAQ" scope="topic" nosearch="on" nototal="on" header=" * *Topic: Summary: *"
format=" * [[ $topic ]]: $summary" }%
```

To get this:

- **Topic: Summary:**
- [TWikiFAQ](#): Frequently Asked Questions About TWiki This is a real FAQ, and also a demo of one easily implemented knowledge base solution. See how it's done, click Edit
- [TWikiFaqTemplate](#): FAQ: Answer: Back to: TWikiFAQ
- [TextFormattingFAQ](#): Text Formatting FAQ The most frequently asked questions about text formatting are answered. Also, TextFormattingRules contains the complete TWiki shorthand system ...

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" regex="on"
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\:__ TwikiFAQ" scope="text" regex="on" nosearch="on" nototal="on"
header="TWiki FAQs:" format="    * $pattern(.*?FAQ\:[\n\r]*([^\n\r]+).*) [[ $topic]
[Answer...]]" }%
```

To get this:

TWiki FAQs:

- How can I create a simple [TWiki Form](#) based application? [Answer...](#)
- How do I delete or rename a topic? [Answer...](#)
- How do I delete or rename a file attachment? [Answer...](#)
- Why does the topic revision not increase when I edit a topic? [Answer...](#)
- TWiki 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...](#)
- I would like to install TWiki on my server. Can I get the source? [Answer...](#)
- What does the "T" in TWiki stand for? [Answer...](#)
- So what is this WikiWiki thing exactly? [Answer...](#)
- Everybody can edit any page, this is scary. Doesn't that lead to chaos? [Answer...](#)

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 `$percent` to escape the leading percent of the second search
 - Use `\` to escape the double quotes
 - Use `$dollar` to escape the `$` of `$topic`
 - Use `$nop` to escape the `}%` sequence

Write this:

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

To get this:

- [ATasteOfTWiki](#) is referenced by:
 - [ATasteOfTWiki](#), [ATasteOfTWikiTemplate](#), [NewUserTemplate](#), [TWikiUsersGuide](#), [WebLeftBar](#), [WebLeftBar-orig](#), [WelcomeGuest](#)
- [FormattedSearch](#) is referenced by:
 - [BlackListPlugin](#), [ChartPlugin](#), [EditTablePlugin](#), [EmptyPlugin](#), [GaugePlugin](#), [GlobalReplacePlugin](#), [LocalCityTimePlugin](#), [ManagingWebs](#), [PreferencesPlugin](#), [RenderListPlugin](#), [SearchHelp](#), [SearchPatternCookbook](#), [SlideShowPlugin](#), [SmiliesPlugin](#), [SpreadSheetPlugin](#), [TWikiDocumentation](#), [TWikiForms](#), [TWikiHistory](#), [TWikiReferenceManual](#), [TWikiReleaseNotes04x00x00](#), [TWikiScripts](#), [TWikiSearchDotPm](#), [TWikiSiteTools](#), [TWikiUISearchDotPm](#), [TWikiVariablesQuickStart](#), [TagMePlugin](#), [VarCachePlugin](#), [VarMETA](#), [VarSEARCH](#), [VarURLPARAM](#), [WebLeftBar](#), [WebLeftBar-orig](#), [WelcomeGuest](#)
- [TWikiAccessControl](#) is referenced by:
 - [EditTablePlugin](#), [FileAttachment](#), [MainFeatures](#), [ManagingTopics](#), [ManagingUsers](#), [SitePermissions](#), [SourceCode](#), [TWikiAccessControl](#), [TWikiDocumentation](#), [TWikiForms](#), [TWikiFuncDotPm](#), [TWikiHistory](#), [TWikiPreferences](#), [TWikiReferenceManual](#), [TWikiScripts](#), [TWikiSiteTools](#), [TWikiTopics](#), [TWikiTutorial](#), [TWikiUserAuthentication](#), [TWikiVariables](#), [VarSEARCH](#), [WebPreferences](#), [WebPreferencesHelp](#), [WikiCulture](#), [WikiWord](#)
- [TWikiSite](#) is referenced by:
 - [AdminToolsCategory](#), [BlackListPlugin](#), [InstantEnhancements](#), [InterwikiPlugin](#), [ManagingWebs](#), [StartingPoints](#), [TWikiDocumentation](#), [TWikiGlossary](#), [TWikiI18NDotPm](#), [TWikiInstallationGuide](#), [TWikiPreferences](#), [TWikiReferenceManual](#), [TWikiRegistration](#), [TWikiSite](#), [TWikiTopics](#), [TWikiTutorial](#), [TWikiUserAuthentication](#), [TWikiUsersGuide](#), [WabiSabi](#), [WebLeftBar](#), [WebLeftBar-orig](#), [WebSiteTools](#), [WelcomeGuest](#), [WhatDoesTWikiStandFor](#), [WhatIsWikiWiki](#), [WikiCulture](#), [WikiReferences](#)
- [VarCachePluginTest](#) is referenced by:
 -
- [WabiSabi](#) is referenced by:
 - [TWikiSite](#), [WabiSabi](#), [WhatIsWikiWiki](#), [WikiCulture](#)
- [WhatIsWikiWiki](#) is referenced by:
 - [TWikiReleaseNotes04x00x00](#), [WikiCulture](#)
- [WikiCulture](#) is referenced by:
 - [TWikiAccessControl](#), [TWikiSite](#), [WabiSabi](#), [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, \$dollar\$dollarpercntSEARCH{ for level four, etc.

Most recently changed pages

Write this:

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

To get this:

WebStatistics	TWikiAdminGroup	16 Oct 2006 - 07:00
TagMeSearch	PeterThoeny	15 Oct 2006 - 05:53
TagMeViewAllTags	PeterThoeny	15 Oct 2006 - 05:53
TagMeViewMyTags	PeterThoeny	15 Oct 2006 - 05:53
TagMePlugin	PeterThoeny	15 Oct 2006 - 05:30
BlackListPlugin	PeterThoeny	30 Sep 2006 - 22:21

TWikiUpgradeGuide	PeterThoeny	29 Sep 2006 - 23:28
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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 [TWiki:Plugins.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" regex="on" nosearch="on" nototal="on" order="modified"
reverse="on" format="$percentCALC{$IF($TIME($date) < $GET(weekold), <nop>, | [[ $topic]] |
$wikiusername | $date | $rev |)}$percent" 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 `$percent` 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 TWiki rendering process
- Otherwise, the search hit is formatted and returned

To get this:

WebStatistics	TWikiAdminGroup	16 Oct 2006 - 07:00	139
TagMeSearch	PeterThoeny	15 Oct 2006 - 05:53	9
TagMeViewAllTags	PeterThoeny	15 Oct 2006 - 05:53	6
TagMeViewMyTags	PeterThoeny	15 Oct 2006 - 05:53	6
TagMePlugin	PeterThoeny	15 Oct 2006 - 05:30	16

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{"..."}` variable. Example:

Write this:

```
<form action="%SCRIPTURLPATH{"view"}%/%WEB%//%TOPIC%">
Find Topics:
<input type="text" name="q" size="32" value="%URLPARAM{"q"}%" />&nbsp;  <input
type="submit" class="twikiSubmit" value="Search" />
</form>
Result:
%SEARCH{ search="%URLPARAM{"q"}%" format="      * $web.$topic: %BR% $summary"
nosearch="on" }%
```

To get this:

Find Topics:

Result:

Related Topics: [UserDocumentationCategory](#)

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 specific TWiki 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.
 - NOTE:** 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 can't be managed using browser-based Attachment controls. You can use your browser to create [TWikiVariables](#) shortcuts, 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](#).
 - NOTE:** The topic must already exist. It is a two step process if you want to attach a file to a non-existing topic; 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, ex: *.php files are renamed to *.php.txt so that no one can place code that would be read in a .php file.
 - The previous upload path is retained for convenience. In case you make some changes to the local file and want to upload it, again you can copy the previous upload path into the Local file field.
 - TWiki can limit the file size. This is defined by the %ATTACHFILESIZELIMIT% variable of the [TWikiPreferences](#), currently set at 50 KB.

-  It's 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 {AutoAttachPubDir} configuration option.
 - **NOTE:** 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](#).
-  **NOTE:** 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** file: `Sample.txt`
 2. **Edit** topic and enter: `%ATTACHURL%/Sample.txt`
 3. **Preview:** `%ATTACHURL%/Sample.txt` text appears as: `/p/pub/TWiki04/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 in [TWikiVariables](#)
- GIF, JPG and PNG images can be attached and shown embedded in a topic. Example:
 1. **Attach** file: `Smile.gif`
 2. **Edit** topic and write text: `%ATTACHURL%/Smile.gif`
 3. **Preview:** text appears as `/p/pub/TWiki04/FileAttachment/Smile.gif`, an image.

File Attachment Contents Table

Files attached to a topic are displayed in a directory table, displayed at the bottom of the page, or optionally, hidden and accessed when you click **Attach**.

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

Update attachment Sample . txt

Version	Action	Date	Who	Comment
1	view	22 Jul 2000 - 19:37	UploadingUser	Just a sample

Previous upload Sample . txt ([TWikiContributor](#))

Local file

Comment

Link

Create a link to the attached file

Hide file

Do not show attachment in table

Select a new local file to update this attachment.

Upload up to 10000 KB.

Images will be displayed, for other attachments a link will be created.

Attachments will not be shown in topic view page.

- The first table is a list of all attachments, including their attributes. An h means the attachment is hidden, it isn't listed when viewing a topic.
- The second table is all the versions of the attachment. Click on **View** to see that version. If it's the most recent version, you'll be taken to an URL that always displays the latest version, which is usually what you want.
 - **To change the comment** on an attachment, enter a new comment and then click **Change properties**. 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 **Hide file** checkbox, then click **Change properties**.

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.

Twiki Forms

Add structure to content with forms attached to twiki topics. TWiki forms (with form fields) and formatted search 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 only form attached to it at a time.

Typical steps to build an application based on TWiki forms:

1. Define a form template
2. Enable the form for a web
3. Add the form to a [template topic](#)
4. Build an HTML form to create new topics based on that template topic
5. Build a [FormattedSearch](#) to list topics that share the same form

Defining a Form Template

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

Form Template Elements

- **form template** - a set of fields defining a form
 - A web can use one or more form templates
- **form** - additional meta data (besides the freeform TEXTAREA) attached to a topic
 - Within a form-enabled web, individual topics can have a form or no form
- **form field** - a named item in a form (also known as a *key*)
- **field type** - selects the field type:

<u>Input type</u>	<u>Type field</u>	<u>Size field</u>	<u>Value field</u>
One or more checkboxes	checkbox	number of items per line	comma list of item labels
One or more checkboxes, plus Set and Clear buttons	checkbox+buttons	(same)	(same)
One or more radio buttons (radio buttons are mutually exclusive; only one can be selected)	radio	(same)	(same)
Read-only label text	label	<i>ignored</i>	text
Drop-down menu or scrollable box	select	1 for drop down, 2 and up for scrollable box	comma-separated list of options
A one-line text field	text	text box width in number of characters	initial text, if a new topic is created with a form template
A text box	textarea	columns x rows, e.g. 80x6; default size is 40x5	initial text, if a new topic is created with a form template

- **field value** - one or more values from a fixed set (select, checkbox, radio type) or free-form (label, text, text area).

Defining a Form

1. Create a new topic with your form name: **YourForm**, **ExpenseReportForm**, **InfoCategoryForm**, **RecordReviewForm**, whatever you need.
2. Create a TWiki table, with each column head 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: WebForm

```
| *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... | |
```

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

You can also retrieve possible values for select, checkbox or radio types from other topics:

Example: WebForm

- In the WebForm topic, define the form:

<u>Name</u>	<u>Type</u>	<u>Size</u>	<u>Values</u>	<u>Tooltip message</u>	<u>Attributes</u>
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:

<u>Name</u>	<u>Type</u>	<u>Tooltip message</u>
NoDisclosure	option	blah blah...
Public Supported	option	blah blah...
Public FAQ	option	blah blah...

Field values can also be obtained as the result of a [FormattedSearch](#). For example,

```
%SEARCH{"Office$" scope="topic" web="%MAINWEB%" nototal="on" nosummary="on"
nosearch="on" regex="on" format="$web.$topic" separator=", " }%
```

when used in the value field of the form definition, will take the set of field values to be all topic names in the Main web which end in "Office".

Notes:

- A very few field names are reserved. If you try to use one of these names, TWiki will automatically append an underscore to the name when the form is used.
- 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 template.
- If a `label` field has no name (blank first column in the form definition) it will **not** be shown when the form is **viewed**, only when it is **edited**.
- The topic definition is not read when a topic is viewed.
- Field names can 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.

- Field names have to be unique. If the same name is necessary (as when the field values for several fields are obtained from the same topic), an alternative name must be assigned using the `[ [ . . . ] ]` notation.
- The topic defining field values can also be generated through a [FormattedSearch](#), which must yield a suitable table as the result.
- Form definition topics can be protected in the usual manner, using [TWikiAccessControl](#), to limit who can change the form template 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.
- The **Tooltip message** column is used as a tooltip for the field name (only if field name is a [WikiName](#)) - you only see the tooltip in edit view.
- The **Attributes** column is used to define special behavior for that form field (multiple attributes can be entered, with or without separators):
 - 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.

Enabling Forms by Web

Forms have to be enabled for each individual web. The **WEBFORMS** variable in [WebPreferences](#) is optional and defines a list of possible form templates.

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.

Add a form to a topic

- Edit a topic and follow the "Add form" button to add a Form to the topic. 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" value="Create" />
</form>
```

-  **Tip:** For TWiki applications you can [automatically generate unique topicnames](#).
-  **Note:** Initial values will not be submitted to the form of a new topic if you only use the `formtemplate` parameter.

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.

Changing a form

- You can change a form definition, and TWiki 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)

Searching for Form Data

TWiki Forms accept user-input data, stored as [TWikiMetaData](#). Meta data also contains program-generated info about changes, attachments, etc. To find, format and display form and other meta data, see [TWikiMetaData](#), **FORMFIELD**, **SEARCH** and **METASEARCH** variables in [TWikiVariables](#), and [TWiki Formatted Search](#).

Example

TWiki users often want to have an overview of topics they contributed to. With the **\$formfield** parameter it is easy to display the value of a classification field next to the topic link:

```
| *Topic* | *Classification* |
%SEARCH{"%MAINWEB%.UserName" scope="text" regex="off" nosearch="on" nototal="on"
order="modified" reverse="on"
format="|<b>[[ $web.$topic ] [$topic]]</b> |<nop>$formfield(TopicClassification) |"
web="Sandbox"}%
```

Extending the range of form data types

Several Plugins allow you to extend the range of data types accepted by forms. For example, the [TWiki:Plugins.DateFieldPlugin](#) lets you add a 'date' type to the available data types. All 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.

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`.

Importing Category Table Data

Very, very old TWiki releases used a system called the "TWikiCategoryTable". Later releases support automatic import of this data.

On upgrading from the previous TWiki, a Form Template topic has to be built for each web that used a Category Table, recreating the fields and values from the old **twikicatitems.tmp1**. The replacement Form Template must be set as the first item in the [WebPreferences](#) variable **WEBFORMS**. If missing, pages will display, but attempting to edit results in an error message.

The new Form Template system should work with old Category Table data with no special conversion. Data is assigned to Meta variables the first time an imported topic is edited and saved in the new system.

 If things aren't working correctly, there may be useful entries in `data/warning.txt`.

TWiki Templates

Definition of the templates used to render all HTML pages displayed in TWiki

Overview

There are three types of template:

- **Master Templates:** Define blocks of text for use in other templates
- **HTML Page Templates:** Define the layout of TWiki pages
- **Template Topics:** Define default text when you create a new topic

All three types of template use the TWiki template system.

The TWiki Template System

Templates are plain text with embedded *template directives* that tell TWiki how to compose blocks of text together to create something new.

How Template Directives Work

- Template directives are embedded in templates.
- 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. Text between this and the `%TMPL:END%` directive is not used in-place, but is saved for later use with `%TMPL:P`. Leading and trailing whitespace is ignored.
 - `%TMPL:END%`: Ends a block definition.
 - `%TMPL:P{"var"}%`: Includes a previously defined block.
 - `%{ . . . }%`: is a comment.
- Two-pass processing lets you use a variable before or after declaring it.
- Templates and [TWikiSkins](#) work transparently and interchangeably. For example, you can create a skin that overloads only the `twiki.tmpl` master template, like `twiki.print.tmpl`, that redefines the header and footer.
-  Use of template directives is optional: templates work without them.
-  **NOTE:** Template directives work only for templates: they do not get processed in normal topic text.

`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 [TWikiVariables](#).

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 templates 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" template; otherwise it will expand the "link_active" template. See [IfStatements](#) for details of supported context identifiers.

Finding Templates

Templates are stored either in the **twiki/templates** directory, or can also be read from user topics. As an example, **twiki/templates/view.tmpl** is the default template file for the **twiki/bin/view** script.

Templates that are included using `%TMPL:INCLUDE%` are also found using the same search algorithm, unless you explicitly put ' .
tmpl ' at the end of the template name. In this case, the string is assumed to be the full name of a template in the `templates` directory, and the algorithm isn't used.

TWiki uses the following search order to determine which template file or topic to use for a particular script. The *skin path* is set as described in [TWikiSkins](#).

1. templates/**web/script.skin**.tmpl for each **skin** on the skin path
 -  this usage is supported **for compatibility only** and is **deprecated**. Store web-specific templates in TWiki topics instead.
2. templates/**script.skin**.tmpl for each **skin** on the skin path
3. templates/**web/script**.tmpl
 -  this usage is supported **for compatibility only** and is **deprecated**. Store web-specific templates in TWiki topics instead.
4. templates/**script**.tmpl
5. The TWiki topic **web.topic** if the template name can be parsed into **web.topic**
6. The TWiki topic **web.SkinSkinScript**Template for each **skin** on the skin path
7. The TWiki topic **web.Script**Template
8. The TWiki topic TWiki04.**SkinSkinScript**Template for each **skin** on the skin path
9. The TWiki topic TWiki04.**Script**Template

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. `Twiki04.PrintSkinExampleTemplate`
- XI. `Twiki04.PatternSkinExampleTemplate`
- XII. `Twiki04.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 variables can be user to override the 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.TWikiPreferences](#), or [TWiki04.TWikiPreferences](#) (using *Set*), the indicated templates will be chosen for `view` and `edit` respectively. The template search order is as specified above.

Master Templates

Master templates use the block definition directives (`%TMPL:DEF` and `%TMPL:END%`) to define common sections that appear in two or more other templates. `twiki.tmp1` is the default master template.

<u>Template variable:</u>	<u>Defines:</u>
<code>%TMPL:DEF{"sep"}%</code>	" " separator
<code>%TMPL:DEF{"htmldoctype"}%</code>	Start of all HTML pages
<code>%TMPL:DEF{"standardheader"}%</code>	Standard header (ex: view, index, search)
<code>%TMPL:DEF{"simpleheader"}%</code>	Simple header with reduced links (ex: edit, attach, oops)
<code>%TMPL:DEF{"standardfooter"}%</code>	Footer, excluding revision and copyright parts
<code>%TMPL:DEF{"oops"}%</code>	Skeleton of oops dialog

HTML Page Templates

HTML page templates are files of HTML mixed with template directives that tell TWiki how to build up an HTML page. As described above, the template system supports the use of 'include' directives that let you re-use the same sections of HTML - such as headers and footers - in several different places.

TWiki uses HTML page templates when composing the output from all actions, like topic view, edit, and preview. This allows you to change the look and feel of all pages by editing just a few template files.

HTML page templates are also used in the definition of [TWikiSkins](#).

Template Topics

Template topics define the default text for new topics. There are three types of template topic:

<u>Topic Name:</u>	<u>What it is:</u>
WebTopicViewTemplate	Error page shown when you try to view a nonexistent topic
WebTopicNonWikiTemplate	Alert page shown when you try to view a nonexistent topic with a non-WikiName
WebTopicEditTemplate	Default text shown when you create a new topic.

When you create a new topic, TWiki locates a topic to use as a content template 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 TWiki04 web
2. `WebTopicEditTemplate` in the current web
3. `WebTopicEditTemplate` in the TWiki04 web

Edit Template Topics and Variable Expansion

The following variables get expanded when a user creates a new topic based on a template topic:

<u>Variable:</u>	<u>Description:</u>
%DATE%	Signature format date. See VarDATE
%GMTIME%	Date/time. See VarGMTIME
%GMTIME{...}%	Formatted date/time. See VarGMTIME2
%NOP%	A no-operation variable that gets removed. Useful to prevent a SEARCH from hitting an edit template topic; also useful to escape a variable like %URLPARAM%NOP%{...}%
%STARTSECTION{type="templateonly"}% ... %ENDSECTION{type="templateonly"}%	Text that gets removed when a new topic based on the template is created. See notes below.
%SERVERTIME%	Date/time. See VarSERVERTIME
%SERVERTIME{...}%	Formatted date/time. See VarSERVERTIME2
%USERNAME%	Login name of user who is instantiating the new topic, e.g. guest
%URLPARAM{"name"}%	Value of a named URL parameter
%WIKINAME%	WikiName of user who is instantiating the new topic, e.g. TWikiGuest
%WIKIUSERNAME%	User name of user who is instantiating the new tpoic, e.g. Main. TWikiGuest

%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:

This template can only be changed by:
* Set ALLOWTOPICCHANGE = %MAINWEB%.TWikiAdminGroup

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 TWiki variables that would otherwise be expanded during topic creation e.g.i escape %nop>SERVERTIME% with %SER%NOP%VERTIME%.

All other variables are unchanged, e.g. are carried over "as is" into the new topic.

Template Topics in Action

Here is an example for creating new topics based on a specific template topic:

- New example topic: (date format is YYYYxMMxDD)

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}%/%WEB%/">
  * New example topic:
    <input type="text" name="topic" value="ExampleTopic%SERVERTIME{$yearx$moxx$day}%"
size="26" />
    <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="twikiSubmit" value="Create" />
    (date format is <nop>YYYYxMMxDD)
</form>
```

See [TWikiScripts](#) for details of the parameters that the `edit` script understands.



TIP: You can use the `%WIKIUSERNAME%` and `%DATE%` variables in your topic templates to include the signature of the person creating a new topic. The variables are expanded into fixed text when a new topic is created. The standard signature is:

```
-- %WIKIUSERNAME% - %DATE%
```

Automatically Generated Topicname

If you want to make a TWiki application where you need automatically generated unique topicnames, you can use 10 X's in the `edit` / `save` URL, and they will be replaced on topic save with a count value. For example, `BugIDXXXXXXXXXX` will result in topics named `BugID0`, `BugID1`, `BugID2` etc.

Example link to create a new topic:

```
[[%SCRIPTURLPATH{"edit"}%/%WEB%/BugIDXXXXXXXXXX?templatetopic=BugTemplate&topicparent=%TOPIC%&t=%SERVERTIME{"$day$hour$min$sec"}%][Create new item]]=
```

Master Templates by Example

Attached is an example of an oops based template `oopsbase.tmpl` and an example oops dialog `oopstest.tmpl` based on the base template. **NOTE:** This isn't the release version, just a quick, simple demo.

Base template `oopsbase.tmpl`

The first line declares a delimiter variable called `"sep"`, used to separate multiple link items. The variable can be called anywhere by writing `%TMPL:P{"sep"}%`

```
%TMPL:DEF{"sep"}% | %TMPL:END%
<html>
<head>
  <title> %WIKITOOLNAME% . %WEB% . %TOPIC% %TMPL:P{"titleaction"}%</title>
  <base href="%SCRIPTURLPATH{"view"}%/%WEB%/ %TOPIC%">
  <meta name="robots" content="noindex">
</head>
<body bgcolor="#FFFFFF">
<table width="100%" border="0" cellpadding="3" cellspacing="0">
  <tr>
    <td bgcolor="%WEBBGOLOR%" rowspan="2" valign="top" width="1%">
      <a href="%WIKIHOMEURL%">
        </a>
      </td>
    <td>
      <b>%WIKITOOLNAME% . %WEB% . </b><font size="+2">
        <B>%TOPIC%</B> %TMPL:P{"titleaction"}%</font>
      </td>
    </tr>
    <tr bgcolor="%WEBBGOLOR%">
      <td colspan="2">
        %TMPL:P{"webaction"}%
      </td>
    </tr>
  </table>
  --- ++ %TMPL:P{"heading"}%
  %TMPL:P{"message"}%
  <table width="100%" border="0" cellpadding="3" cellspacing="0">
    <tr bgcolor="%WEBBGOLOR%">
      <td valign="top">
```

```

        Topic <b>%TOPIC%</b> . {
            %TMPL:P{"topicaction"}%
        }
    </td>
</tr>
</table>
</body>

```

Test template oopstest.tmpl

Each oops template basically just defines some variables and includes the base template that does the layout work.

```

%TMPL:DEF{"titleaction"}% (test =titleaction=) %TMPL:END%
%TMPL:DEF{"webaction"}% test =webaction= %TMPL:END%
%TMPL:DEF{"heading"}%
Test heading %TMPL:END%
%TMPL:DEF{"message"}%
Test =message=. Blah blah blah blah blah blah blah blah blah blah...

    * Some more blah blah blah blah blah blah blah blah blah...
    * Param1: %PARAM1%
    * Param2: %PARAM2%
    * Param3: %PARAM3%
    * Param4: %PARAM4%
%TMPL:END%
%TMPL:DEF{"topicaction"}%
Test =topicaction=:
[ [%WEB%.%TOPIC%][OK]] %TMPL:P{"sep"}%
[ [%TWIKIWEB%.WikiRegistration][Register]] %TMPL:END%
%TMPL:INCLUDE{"oopsbase"}%

```

Sample screen shot of oopstest.tmpl

With URL: .../bin/oops/Sandbox/TestTopic2?template=oopstest¶m1=WebHome¶m2=WebNotify


collaborate with

TWiki . Sandbox . **WebHome (test titleaction)**

test webaction

Test heading

Test message. Blah blah blah blah blah blah blah blah blah...

- Some more blah blah blah blah blah blah blah blah blah...
- Param1: [WebHome](#)
- Param2: [WebNotify](#)
- Param3: %PARAM3%
- Param4: %PARAM4%

Topic **WebHome** . { Test topicaction: [OK](#) | [Register](#) }

Related Topics: [TWikiSkins](#), [DeveloperDocumentationCategory](#), [AdminDocumentationCategory](#)

TWiki Skins

Skins overlay regular templates to give different looks and feels to TWiki screens.

Overview

TWiki uses [TWikiTemplates](#) files 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.

TWiki ships with a default set of template files that give a basic look-and-feel. TWiki also includes support for *skins* that can be selected to give different, more sophisticated, look and feels. A default TWiki installation will usually start up with the [PatternSkin](#) already selected. Skins may also be defined by third parties and loaded into a TWiki installation to give more options. To see how TWiki looks when **no** skin is selected, [view this topic with a non-existent 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.

 **Tip:** [TWiki:TWiki.TWikiSkinsSupplement](#) on TWiki.org has supplemental documentation on TWiki Skins.

Changing the default TWiki skin

TWiki default ships with the skin [PatternSkin](#) activated. If 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](#).

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.

The [TWikiTemplates](#) files used for skins are located in the `twiki/templates` directory and are named according to the skin: **<scriptname>.<skin>.tmpl**. For example, the template used for pages generated by the `view` script with the `print` skin selected is `view.print.tmpl` (this is how the **Printable** control is implemented). Skin files may also be defined in TWiki topics - see [TWikiTemplates](#) for details.

To start creating a new skin, copy the default [TWikiTemplates](#) (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 TWiki can be configured to fall back to another skin if a template is not defined in your skin. Name the files as described above (for example `view.myskin.tmpl`).

 **Note:** Two skin names have *reserved* meanings; `text` skin, and skin names starting with `rss` have [hard-coded meanings](#).

The following template files are used for TWiki screens, and are referenced in the TWiki core code. If a skin doesn't define its own version of a template file, then TWiki 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 login 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`, `notwikiuser`, `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
- `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

`twiki.tmpl` is a master template conventionally used by other templates, but not used directly by code.

 **Note:** You are strongly recommended **not** to `TMPL:INCLUDE` the default templates, or templates from other skins, when you are defining your own skin. If you do, you run the risk that the included file might change and break your skin.

Variables in Skins

You can use [template variables](#), [TWikiVariables](#), and other predefined variables to compose your skins. Some commonly used variables in skins:

<u>Variable:</u>	<u>Expanded to:</u>
<code>%WEBLOGONAME%</code>	Filename of web logo
<code>%WEBLOGOIMG%</code>	Image URL of web logo
<code>%WEBLOGOURL%</code>	Link of web logo
<code>%WEBLOGOALT%</code>	Alt text of web logo
<code>%WIKILOGOURL%</code>	Link of page logo
<code>%WIKILOGOIMG%</code>	Image URL of page logo
<code>%WIKILOGOALT%</code>	Alt text of page logo

%WEBBGOLOR%	Web-specific background color, defined in the WebPreferences
%WIKITOOLNAME%	The name of your TWiki site
%SCRIPTURL%	The script URL of TWiki
%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"}%	TWikiForm , if any
%META{"attachments"}%	FileAttachment table
%META{"parent"}%	The topic parent
%EDITTOPIC%	Edit link
%REVTITLE%	The revision title, if any, ex: (r1.6)
%REVINFO%	Revision info, ex: r1.6 - 24 Dec 2002 - 08:12 GMT - TWikiGuest
%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 TWikiPreferences

The "Go" Box and Navigation Box

The default %WEBTOPICLIST% includes 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 onSelect 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

[Welcome](#) | [Register](#) | [Changes](#) | [Topics](#) | [Index](#) | [Search](#) | Go

Using Cascading Style Sheets

CSS is used by [PatternSkin](#), the TWiki skin that is selected in new installations. See that skin topic for information how CSS is used.

CSS files are generally attachments to the skin topic that are included in the the skin templates - in the case of [PatternSkin](#) in the template `css.pattern.tpl`.

Write in your main template:

```
<style type='text/css' media='all'>@import url('%PUBURLPATH%/%TWIKIWEB%/MySkin/mystyle.css');</style>
```

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 TWiki 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 *TWiki template macros* which by default, are defined in the `attachables.tmpl` template using the `%TMPL:DEF` macro syntax described in [TWikiTemplates](#). These macros are:

Macro	Description
ATTACH:files:header	Standard title bar
ATTACH:files:row	Standard row
ATTACH:files:footer	Footer for all screens
ATTACH:files:header:A	Title bar for upload screens, with attributes column
ATTACH:files:row:A	Row for upload screen
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%	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
%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 [TWiki:Plugins/SkinPackagingHowTo](#) and [TWiki:Plugins/SkinDeveloperFAQ](#)

Browsing Installed Skins

You can try out all installed skins in the [TWikiSkinBrowser](#).

Activating Skins

TWiki uses a *skin search path*, which lets you combine skins additively. The skin path is defined using a combination of [TWikiVariables](#) and URL parameters.

TWiki works by asking for a template for a particular function - for example, 'view'. The detail of how templates are searched for is described in [TWikiTemplates](#), 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.tpl`. 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.tpl` will be searched for first, then `view.pattern.tpl` and finally `view.tpl`.

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`. Example activation of [PrintSkin](#) that generates a printable page:

- <http://twiki.org/cgi-bin/view/TWiki04/TWikiSkins?skin=print>

Setting `SKIN` (or the `?skin` parameter in the URL) replaces the existing skin path setting. 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 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 TWiki 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: [TWikiSkinBrowser](#), [AdminDocumentationCategory](#), [DeveloperDocumentationCategory](#), [TWiki:TWiki.TWikiSkinsSupplement](#)

-- **Contributors:** [TWiki:Main.PeterThoeny](#), [TWiki:Main.MikeMannix](#), [TWiki:Main.CrawfordCurrie](#)

TWiki Meta Data

Additional topic data, program-generated or from [TWikiForms](#), is stored in META variable name/value pairs

Overview

[TWikiMetaData](#) uses META variables to store topic data that's separate from the main free-form content. This includes program-generated info like [FileAttachment](#) and topic movement data, and user-defined [TWikiForms](#) info. Use META variables to format and display Meta Data.

Meta Data Syntax

- Format is the same as in [TWikiVariables](#), except all fields have a key.
 - `%META:<type>{key1="value1" key2="value2" ...}%`
- Order of fields within the meta variables is not defined, except that if there is a field with key `name`, this appears first for easier searching (note the order of the variables themselves is defined).

- Each meta variable is on one line.
- \n (new line) is represented in values by %_N_ and " (double-quotes) by %_Q_%.

Example of Format

```
%META:TOPICINFO{version="1.6" date="976762663" author="LastEditorWikiName"
format="1.0"}%
    text of the topic
%META:TOPICMOVED{from="Codev.OldName" to="Codev.NewName"
    by="TopicMoverWikiName" date="976762680"}%
%META:TOPICPARENT{name="NavigationByTopicContext"}%
%META:FILEATTACHMENT{name="Sample.txt" version="1.3" ... }%
%META:FILEATTACHMENT{name="Smile.gif" version="1.1" ... }%
%META:FORM{name="WebFormTemplate"}%
%META:FIELD{name="OperatingSystem" value="OsWin"}%
%META:FIELD{name="TopicClassification" value="PublicFAQ"}%
```

Meta Data Specifications

The current version of Meta Data is 1.0, with support for the following variables.

META:TOPICINFO

<u>Key</u>	<u>Comment</u>
version	Same as RCS 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 variable exists in the topic, older ones are to be found in the rcs history.

```
%META:TOPICMOVED{from="Codev.OldName" to="Codev.NewName" by="talintj" date="976762680"}%
```

<u>Key</u>	<u>Comment</u>
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 RCS history.
- there is only one META:TOPICMOVED in a topic, older move information can be found in the RCS history.

META:TOPICPARENT

<u>Key</u>	<u>Comment</u>
------------	----------------

The topic from which this was created, [WebHome](#) if done from GO, othewise topic where ? or form used. Normally just topic, name but is full web.topic format if parent is in a different Web. Renaming a Web will then only break a few of these references or they can be scanned and fixed.

META:FILEATTACHMENT

<u>Key</u>	<u>Comment</u>
name	Name of file, no path. Must be unique within topic
version	Same as RCS 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:

<u>Key</u>	<u>Comment</u>
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

<u>Key</u>	<u>Comment</u>
name	A topic name - the topic represents one of the TWikiForms . 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 template definition is not read.

<u>Key</u>	<u>Name</u>
name	Ties to entry in TWikiForms template, is title with all bar alphanumerics and . removed
title	Full text from TWikiForms template
value	Value user has supplied via form

Recommended Sequence

There is no absolute need for Meta Data variables to be listed in a specific order within a topic, but it makes sense to do so 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 **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%` variable. This is mostly used in the `view`, `preview` and `edit` scripts.

You can render form fields in topic text by using the `FORMFIELD` variable. Example:
`%FORMFIELD{"TopicClassification"}%`
For details, see [VarFORMFIELD](#).

Current support covers:

<u>Variable usage:</u>	<u>Comment:</u>
<code>%META{"form"}%</code>	Show form data, see TWikiForms .
<code>%META{"formfield"}%</code>	Show form field value. Parameter: name="field_name" . Example: <code>%META{ "formfield" name="TopicClassification" }%</code>
<code>%META{"attachments"}%</code>	Show attachments, except for hidden ones. Options: all="on" : Show all attachments, including hidden ones.
<code>%META{"moved"}%</code>	Details of any topic moves.
<code>%META{"parent"}%</code>	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 " > ".

Known Issues

At present, there is no Meta Data support for Plugins. However, the format is readily extendable and the `Meta.pm` code that supports the format needs only minor alteration.

Related Topics: [DeveloperDocumentationCategory](#), [UserDocumentationCategory](#)

TWiki Plugins

Add functionality to TWiki with readily available Plugins; create Plugins based on APIs

Overview

You can add Plugins to extend TWiki functionality, without altering the core code. A plug-in approach lets you:

- add virtually unlimited features while keeping the main TWiki code compact and efficient;

- heavily customize an installation and still do clean updates to new versions of TWiki;
- rapidly develop new TWiki functions in Perl using the Plugin API.

Everything to do with TWiki Plugins - demos, new releases, downloads, development, general discussion - is available at TWiki.org, in the [TWiki:Plugins](#) web.

TWiki 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 TWiki, but are independently developed and maintained.

 **Tip:** [TWiki:TWiki.TWikiPluginsSupplement](#) on TWiki.org has supplemental documentation on TWiki Plugins.

Installing Plugins

Each TWiki 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 [TWiki:Plugins](#) web at TWiki.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 TWiki 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.

[InstalledPlugins](#) shows which Plugins are: 1) installed, 2) loading properly, and 3) what [TWiki:Codev.PluginHandlers](#) they invoke. Any failures are shown in the Errors section. The `%FAILEDPLUGINS%` variable can be used to debug failures. You may also want to check your webserver error log and the various TWiki 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. Use the [TWiki:Plugins.PluginBenchmarkAddOn](#), or test manually with the Apache `ab` utility. Example on Unix:

```
time wget -q0 /dev/null /cgi-bin/view/TWiki04/AbcPlugin
```

 If you need to install an "expensive" Plugin, and you need its functionality only in one web, you can place the Plugin topic into that web. TWiki will initialize the Plugin only if the Plugin topic is found (which won't be the case for other webs.)

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:

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, TWiki executes Plugins in alphabetical order on Plugin name. It is possible to change the order, for example to evaluate database variables before the spreadsheet CALCs. This can be done with {PluginsOrder} in the Plugins section of [configure](#).

Plugin-Specific Settings

Plugin-specific settings are done in individual Plugin topics. Two settings are standard for each Plugin:

- 1. One line description, used to form the bullets describing the Plugins in the [TextFormattingRules](#) topic:
 - Set SHORTDESCRIPTION = Create dynamic foo bar reports
- 2. Debug Plugin, output can be seen in data/debug.txt. Set to 0=off or 1=on:
 - Set DEBUG = 0
- The settings can be retrieved as Preferences variables like %<pluginname>_<var>%. For example, %DEFAULTPLUGIN_SHORTDESCRIPTION% shows the description of the DefaultPlugin.

Listing Active Plugins

Plugin status variables let you list all active Plugins wherever needed.

%ACTIVATEDPLUGINS%

On this TWiki site, the enabled Plugins are: [SpreadSheetPlugin](#), [CommentPlugin](#), [BlackListPlugin](#), [ChartPlugin](#), [EditTablePlugin](#), [GaugePlugin](#), [GoogleAjaxSearchPlugin](#), [InterwikiPlugin](#), [LocalCityTimePlugin](#), [PerlDocPlugin](#), [PreferencesPlugin](#), [RenderListPlugin](#), [SlideShowPlugin](#), [SmiliesPlugin](#), [TWikiDrawPlugin](#), [TWikiOrgPlugin](#), [TablePlugin](#), [TagMePlugin](#), [VarCachePlugin](#), [WysiwygPlugin](#).

%PLUGINDESCRIPTIONS%

- [SpreadSheetPlugin](#) (Dakar, 8154): Add spreadsheet calculation like "\$SUM(\$ABOVE())" to tables located in TWiki topics.
- [CommentPlugin](#) (Dakar, 8164): Allows users to quickly post comments to a page without an edit/preview/save cycle.
- [BlackListPlugin](#) (any TWiki, 9979): Utility to keep malicious users away from a public TWiki site
- [ChartPlugin](#) (1.401): Create PNG or GIF charts to visualize TWiki tables
- [EditTablePlugin](#) (Dakar, 8154): Edit TWiki tables using edit fields, date pickers and drop down boxes
- [GaugePlugin](#) (1.003): Build dashboards that contain graphical images of gauges defined with %GAUGE{ }% variables.
- [GoogleAjaxSearchPlugin](#) (Dakar, \$Rev: 11099\$): Dynamic Google AJAX search service for public TWiki sites
- [InterwikiPlugin](#) (Dakar, \$Rev: 8329\$): Link **ExternalSite:Page** text to external sites based on aliases defined in a rules topic
- [LocalCityTimePlugin](#) (1.011): Shows the local time of a city embedded in a TWiki topic.
- [PerlDocPlugin](#) (1.001): Extract the Perl documentation (POD) from a Perl module and display it in a topic.
- [PreferencesPlugin](#) (Dakar, 9610): Allows editing of preferences using fields predefined in a form
- [RenderListPlugin](#) (Dakar, \$Rev: 9598\$): Render bullet lists in a variety of formats
- [SlideShowPlugin](#) (Dakar, \$Rev: 8154\$): Create web based presentations based on topics with headings.
- [SmiliesPlugin](#) (Dakar, 8154): Render smilies as icons, like : -) for 😊 or :cool: for :cool:
- [TWikiDrawPlugin](#) (Dakar, 8154): Java Applet based drawing editor
- [TWikiOrgPlugin](#) (1.001): TWiki.org specific extensions
- [TablePlugin](#) (Dakar, 8154): Control attributes of tables and sorting of table columns
- [TagMePlugin](#) (Any TWiki, 1.031): Tag wiki content collectively to find content by keywords
- [VarCachePlugin](#) (Dakar, 8154): Cache TWiki variables in selected topics for faster page rendering
- [WysiwygPlugin](#) (Dakar, 9565): Translator framework and WYSIWYG editor for TWiki topics

%FAILEDPLUGINS%

Plugin	Errors
--------	--------

SpreadSheetPlugin	none
CommentPlugin	none
BlackListPlugin	none
ChartPlugin	none
EditTablePlugin	none
GaugePlugin	none
GoogleAjaxSearchPlugin	none
InterwikiPlugin	none
LocalCityTimePlugin	none
PerlDocPlugin	none
PreferencesPlugin	none
RenderListPlugin	none
SlideShowPlugin	none
SmiliesPlugin	none
TWikiDrawPlugin	none
TWikiOrgPlugin	none
TablePlugin	none
TagMePlugin	none
VarCachePlugin	none
WysiwygPlugin	none

Handler	Plugins
afterCommonTagsHandler	VarCachePlugin
afterSaveHandler	TagMePlugin
beforeAttachmentSaveHandler	BlackListPlugin
beforeCommonTagsHandler	PreferencesPlugin VarCachePlugin WysiwygPlugin
beforeEditHandler	WysiwygPlugin
beforeSaveHandler	CommentPlugin BlackListPlugin WysiwygPlugin
commonTagsHandler	SpreadSheetPlugin CommentPlugin BlackListPlugin ChartPlugin EditTablePlugin GaugePlugin LocalCityTimePlugin PerlDocPlugin SlideShowPlugin SmiliesPlugin TWikiDrawPlugin TWikiOrgPlugin TagMePlugin

initPlugin	SpreadSheetPlugin CommentPlugin BlackListPlugin ChartPlugin EditTablePlugin GaugePlugin GoogleAjaxSearchPlugin InterwikiPlugin LocalCityTimePlugin PerlDocPlugin PreferencesPlugin RenderListPlugin SlideShowPlugin SmiliesPlugin TWikiDrawPlugin TWikiOrgPlugin TablePlugin TagMePlugin VarCachePlugin WysiwygPlugin
modifyHeaderHandler	WysiwygPlugin
postRenderingHandler	BlackListPlugin EditTablePlugin PreferencesPlugin WysiwygPlugin
preRenderingHandler	InterwikiPlugin RenderListPlugin SmiliesPlugin TablePlugin

20 plugins

The TWiki Plugin API

The Application Programming Interface (API) for TWiki Plugins provides the specifications for hooking into the core TWiki code from your external Perl Plugin module.

Available Core Functions

The [TWikiFuncDotPm](#) module (`lib/TWiki/Func.pm`) describes **all** the interfaces available to Plugins. Plugins should **only** use the interfaces described in this module.

 **Note:** If you use other core functions not described in `Func.pm`, you run the risk of creating security holes. Also, your Plugin will likely break and require updating when you upgrade to a new version of TWiki.

Predefined Hooks

In addition to TWiki core functions, Plugins can use **predefined hooks**, or **callbacks**, as described in the `lib/TWiki/Plugins/EmptyPlugin.pm` module.

- All but the `initPlugin` are disabled. To enable a callback, remove `DISABLE_` from the function name.

[TWiki:Codev/StepByStepRenderingOrder](#) helps you decide which rendering handler to use.

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 $@;
```
- You can use a flag to avoid running the initialization twice
- The [TWiki:Plugins.PluginBenchmarkAddOn](#) comes in handy to measure and fine-tune the performance of your Plugin

Plugin Version Detection

To eliminate the incompatibility problems bound to arise from active open Plugin development, a Plugin versioning system is provided for automatic compatibility checking.

- All modules require a `$VERSION= '0.000'` variable, beginning at `1.000`.
- The `initPlugin` handler should check all dependencies and return `TRUE` if the initialization is OK or `FALSE` if something went wrong.
 - The Plugin initialization code does not register a Plugin that returns `FALSE` (or that has no `initPlugin` handler).
- `$TWiki::Plugins::VERSION` in the `Twiki::Plugins` module contains the TWiki Plugin API version, currently **1.1**.
 - You can also use the [%PLUGINVERSION{ }%](#) variable to query the Plugin API version or the version of installed Plugins.

Security

- Badly written Plugins can open huge security holes in TWiki. 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. it is better to add sensitive configuration options to the `%Twiki::cfg` hash than adding it as preferences in the Plugin topic
 - See [TWiki:Plugins.MailInContrib](#) for an example of this
 - [TWiki:Plugins.BuildContrib](#) can help you with this
- Always use the `Twiki::Sandbox` to execute commands.
- 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.

Creating Plugins

With a reasonable knowledge of the Perl scripting language, you can create new Plugins or modify and extend existing ones. Basic plug-in architecture uses an Application Programming Interface (API), a set of software instructions that allow external code to interact with the main program. The [TWiki Plugin API](#) Plugins by providing a programming interface for TWiki.

Anatomy of a Plugin

A basic TWiki Plugin consists of two elements:

- a Perl module, ex: `MyFirstPlugin.pm`
- a documentation topic, ex: `MyFirstPlugin.txt`

The Perl module can be a block of code that connects with TWiki alone, or it can include other elements, like other Perl modules (including other Plugins), graphics, TWiki templates, external applications (ex: a Java applet), or just about anything else it can call. In particular, files that should be web-accessible (graphics, Java applets ...) are best placed as attachments of the `MyFirstPlugin` topic. Other needed Perl code is best placed in a `lib/TWiki/Plugins/MyFirstPlugin/` directory.

The Plugin API handles the details of connecting your Perl module with main TWiki code. When you're familiar with the [Plugin API](#), you're ready to develop Plugins.

Creating the Perl Module

Copy file `lib/TWiki/Plugins/EmptyPlugin.pm` to `<name>Plugin.pm`. The `EmptyPlugin.pm` module contains mostly empty functions, so it does nothing, but it's ready to be used. Customize it. Refer to the [Plugin API](#) specs for more information.

If your Plugin uses its own modules and objects, you must include the name of the Plugin in the package name. For example, write `Package MyFirstPlugin::Attrs;` instead of just `Package Attrs;`. Then call it using:

```
use TWiki::Plugins::MyFirstPlugin::Attrs;
$var = MyFirstPlugin::Attrs->new();
```

Measuring and Improving the Plugin Performance

A high quality Plugin performs well. You can use the [TWiki:Plugins.PluginBenchmarkAddOn](#) to measure your [TWiki:Plugins.PluginBenchmarks](#). The data is needed as part of the Documentation Topic.

See also [Hints on Writing Fast Plugins](#).

Writing the Documentation Topic

The Plugin documentation topic contains usage instructions and version details. It serves the Plugin files as [FileAttachments](#) for downloading. (The doc topic is also included *in* the [distribution package](#).) To create a documentation topic:

1. **Copy** the Plugin topic template from TWiki.org. To copy the text, go to [TWiki:Plugins/PluginPackage](#) and:
 - o enter the Plugin name in the "How to Create a Plugin" section
 - o click Create
 - o select all in the Edit box & copy
 - o Cancel the edit
 - o go back to your site to the TWiki04 web
 - o In the [GoBox](#) enter your Plugin name, for example `MyFirstPlugin`, press enter and create the new topic
 - o paste & save new Plugin topic on your site
2. **Customize** your Plugin topic.
 - o Important: In case you plan to publish your Plugin on TWiki.org, use Interwiki names for author names and links to TWiki.org topics, such as [TWiki:Main/TWikiGuest](#). This is important because links should work properly in a Plugin topic installed on any TWiki, not just on TWiki.org.
3. **Document** the performance data you gathered while [measuring the performance](#)
4. **Save** your topic, for use in [packaging](#) and [publishing](#) your Plugin.

OUTLINE: Doc Topic Contents

Check the Plugins web on TWiki.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 %VARIABLES%, and those required by TWiki.>*"

- **Plugins Preferences** *<If user settings are needed, explain... Entering values works exactly like [TWikiPreferences](#) and [WebPreferences](#): six (6) spaces and then:>*
 - o **Set** *<EXAMPLE = value added>*

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 [TWiki:Plugins](#) web.>*"

Packaging for Distribution

The [TWiki:Plugins.BuildContrib](#) is a powerful build environment that is used by the TWiki project to build TWiki 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 (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 TWiki. If your Plugin uses additional files, include them all:
 - `lib/TWiki/Plugins/MyFirstPlugin.pm`
 - `data/TWiki/MyFirstPlugin.txt`
 - `pub/TWiki/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/TWiki/Plugins/MyFirstPlugin.pm`
 - `data/TWiki/MyFirstPlugin.txt`
 - `pub/TWiki/MyFirstPlugin/uparrow.gif`

Publishing for Public Use

You can release your tested, packaged Plugin to the TWiki community through the [TWiki:Plugins](#) web. All Plugins submitted to TWiki.org are available for download and further development in [TWiki:Plugins/PluginPackage](#).

Publish your Plugin by following these steps:

1. **Post** the Plugin documentation topic in the [TWiki:Plugins/PluginPackage](#):
 - enter the Plugin name in the "How to Create a Plugin" section, for example `MyFirstPlugin`
 - paste in the topic text from [Writing the Documentation Topic](#) and save
2. **Attach** the distribution zip file to the topic, ex: `MyFirstPlugin.zip`
3. **Link** from the doc page to a new, blank page named after the Plugin, and ending in `Dev`, ex: `MyFirstPluginDev`. This is the discussion page for future development. (User support for Plugins is handled in [TWiki:Support](#).)
4. **Put** the Plugin into the SVN repository, see [TWiki:Plugins/ReadmeFirst](#) (optional)

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 TWiki community 😊

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 [TWikiFuncDotPm](#) functions that support saving and loading of topics and attachments.

Plugin Internal Data

You can create a Plugin "work area" using the `Twiki::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, `Twiki::Func::storeFile()` and `Twiki::Func::readFile()` are provided to persistently store and retrieve simple data in this area.

Web Accessible Data

Topic-specific data such as generated images can be stored in the topics attachment area, which is web accessible. Use the `Twiki::Func::saveAttachment()` function to store the data.

Recommendation for file name:

- Prefix the filename with an underscore (the leading underscore avoids a nameclash 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: `_FooBarPlugin_img123.gif`

Web specific data can be stored in the Plugin's attachment area, which is web accessible. Use the `Twiki::Func::saveAttachment()` function to store the data.

Recommendation for file names in Plugin attachment area:

- Prefix the filename with an underscore
- Include the name of the web in the filename
- Use only alphanumeric characters, underscores, dashes and periods to avoid platform dependency issues and URL issues
- Example: `_Main_roundedge-ul.gif`

Maintaining Plugins

Discussions and Feedback on Plugins

Each published Plugin has a Plugin development topic on TWiki.org. Plugin development topics are named after your Plugin and end in `Dev`, such as `MyFirstPluginDev`. The Plugin development topic is a great resource to discuss feature enhancements and to get feedback from the TWiki community.

Maintaining Compatibility with Earlier TWiki Versions

The Plugin interface ([TWikiFuncDotPm](#) functions and handlers) evolve over time. TWiki 4.0 introduced new API functions to address the needs of Plugin authors. It also deprecated some functions. Some Plugins written for earlier TWiki releases using unofficial TWiki internal functions no longer work on the TWiki 4.0 codebase. All this means that some Plugins need to be updated to work on the TWiki 4.0 codebase.

Organizations typically do not upgrade to the latest TWiki for many months. However, many administrators still would like to install the latest versions of a Plugin on their older TWiki 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 TWiki releases. This can be done also for Plugins using unofficial TWiki internal functions of an earlier release that no longer work on the latest TWiki codebase. [TWiki:TWiki.TWikiPluginsSupplement#MaintainPlugins](#) has more.

Handling deprecated functions

From time-to-time, the TWiki developers will add new functions to the interface (either to [TWikiFuncDotPm](#), 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 TWiki 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 TWiki.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 TWiki 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 `Twiki::Plugins` version *in which the handler was first deprecated*. For example, if we need to define the `endRenderingHandler` for compatibility with `Twiki::Plugins` versions before 1.1, we would add this to the plugin:

```
package Twiki::Plugins::SinkPlugin;
use vars qw( %TwikiCompatibility );
$TwikiCompatibility{endRenderingHandler} = 1.1;
```

If the currently-running TWiki version is 1.1 *or later*, then the *handler will not be called* and *the warning will not be issued*. TWiki with versions of TWiki::Plugins before 1.1 will still call the handler as required.

Official list of stable TWiki functions for Plugin developers

This module defines official functions that [Plugins](#) can use to interact with the TWiki engine and content.

Refer to [EmptyPlugin](#) and lib/TWiki/Plugins/EmptyPlugin.pm for a template Plugin and documentation on how to write a Plugin.

Plugins should **only** use functions published in this module. If you use functions in other TWiki libraries you might create a security hole and you will probably need to change your Plugin when you upgrade TWiki.

Deprecated functions will still work in older code, though they should *not* be called in new Plugins and should be replaced in older Plugins as soon as possible.

The version of the TWiki::Func module is defined by the VERSION number of the TWiki::Plugins module, currently 1.1. This can be shown by the %PLUGINVERSION% variable. The 'Since' field in the function documentation refers to the VERSION number and the date that the function was added.

Note: Beware! These methods should only ever be called from the context of a TWiki Plugin. They require a Plugins SESSION context to be established before they are called, and will not work if simply called from another TWiki module. For example,

```
use Twiki;
print Twiki::Func::getSkin(),"\n";
```

will fail with Can't call method "getSkin" on an undefined value at Twiki/Func.pm line 83.

If you want to call the methods outside the context of a plugin, you can create a Plugins SESSION object. For example, the script:

```
use Twiki;
$Twiki::Plugins::SESSION = new Twiki();
print Twiki::Func::getSkin(),"\n";
```

will work happily.

- [TWiki System Requirements](#)
 - [Server Requirements](#)
 - [Required CPAN Modules](#)
 - [Optional CPAN Modules](#)
 - [Client Requirements](#)
 - [Important note about TWiki Plugins](#)
- [TWiki Installation Guide](#)
 - [Basic Installation](#)
 - [Next Steps](#)
 - [Troubleshooting](#)
- [TWiki Upgrade Guide](#)
 - [Overview](#)
 - [Upgrade Requirements](#)
 - [Major Changes Compared to TWiki Release 01-Sep-2004](#)
 - [Automated Upgrade Procedure](#)
 - [Manual Upgrade Procedure](#)
 - [Upgrading a Beta](#)
- [TWiki User Authentication](#)
 - [Overview](#)

- [Password Management](#)
- [New User Registration](#)
- [Login Management](#)
 - [No Login](#)
 - [Template Login](#)
 - [Enabling Template Login](#)
 - [Apache Login](#)
 - [Enabling Apache Login using mod_auth](#)
 - [Logons via bin/logon](#)
- [Sessions](#)
 - [Getting, Setting, and Clearing Session Variables](#)
 - [Cookies and Transparent Session IDs](#)
- [TWiki Username vs. Login Username](#)
- [Changing Passwords](#)
- [Changing E-mail Addresses](#)
- [Controlling access to individual scripts](#)
- [How to choose an authentication method](#)
- [TWiki Access Control](#)
 - [An Important Control Consideration](#)
 - [Permissions settings of the webs on this TWiki site](#)
 - [Authentication vs. Access Control](#)
 - [Users and Groups](#)
 - [Managing Users](#)
 - [Managing Groups](#)
 - [The Super Admin Group](#)
 - [Restricting Access](#)
 - [Controlling access to a Web](#)
 - [Controlling access to a Topic](#)
 - [Controlling access to Attachments](#)
 - [How TWiki evaluates ALLOW/DENY settings](#)
 - [Access Control quick recipes](#)
 - [Obfuscating Webs](#)
 - [Authenticate all Webs and Restrict Selected Webs](#)
 - [Authenticate and Restrict Selected Webs Only](#)
 - [Hide Control Settings](#)
- [TWiki Text Formatting](#)
 - [TWiki Editing Shorthand](#)
 - [Using HTML](#)
 - [Script tags](#)
 - [Hyperlinks](#)
 - [Internal Links](#)
 - [External Links](#)
 - [TWiki Variables](#)
 - [TWikiPlugin Formatting Extensions](#)
 - [Common Editing Errors](#)
- [TWiki Variables](#)
 - [Using Variables](#)
 - [Variable Names](#)
 - [Preferences Variables](#)
 - [Setting Preferences Variables](#)
 - [Access Control Variables](#)
 - [Local values for variables](#)
 - [Frequently Used Preferences Variables](#)
 - [Predefined Variables](#)

- [ACTIVATEDPLUGINS -- list of currently activated plugins](#)
- [ALLVARIABLES -- list of currently defined TWikiVariables](#)
- [ATTACHURL -- full URL for attachments in the current topic](#)
- [ATTACHURLPATH -- path of the attachment URL of the current topic](#)
- [AUTHREALM -- authentication realm](#)
- [BASETOPIC -- base topic where an INCLUDE started](#)
- [BASEWEB -- base web where an INCLUDE started](#)
- [DATE -- signature format date](#)
- [DISPLAYTIME -- display time](#)
- [DISPLAYTIME{"format"} -- formatted display time](#)
- [ENCODE{"string"} -- encodes a string to HTML entities](#)
- [ENDSECTION{"name"} -- marks the end of a named section within a topic](#)
- [FAILEDPLUGINS -- debugging for plugins that failed to load, and handler list](#)
- [FORMFIELD{"fieldname"} -- renders a field in the form attached to some topic](#)
- [GMTIME -- GM time](#)
- [GMTIME{"format"} -- formatted GM time](#)
- [HOMETOPIC -- home topic in each web](#)
- [HTTP -- get HTTP headers](#)
- [HTTP_HOST -- environment variable](#)
- [HTTPS -- get HTTPS headers](#)
- [ICON{"name"} -- small documentation graphic or icon of common attachment types](#)
- [ICONURL{"name"} -- URL of small documentation graphic or icon](#)
- [ICONURLPATH{"name"} -- URL path of small documentation graphic or icon](#)
- [IF{"condition" ...} -- simple conditionals](#)
- [INCLUDE{"page"} -- include other topic or web page](#)
- [INCLUDINGTOPIC -- name of topic that includes current topic](#)
- [INCLUDINGWEB -- web that includes current topic](#)
- [LANGUAGE -- current user's language](#)
- [LANGUAGES -- list available TWiki languages](#)
- [LOCALSITEPREFS -- web.topicname of site preferences topic](#)
- [LOGIN -- present a full login link](#)
- [LOGOUT -- present a full logout link](#)
- [MAINWEB -- name of Main web](#)
- [MAKETEXT -- creates text using TWiki's I18N infrastructure](#)
- [META -- displays meta-data](#)
- [METASEARCH -- special search of meta data](#)
- [NOP -- template text not to be expanded in instantiated topics](#)
- [NOTIFYTOPIC -- name of the notify topic](#)
- [PLUGINDESCRIPTIONS -- list of plugin descriptions](#)
- [PLUGINVERSION -- the version of a TWiki Plugin, or the TWiki Plugins API](#)
- [PUBURL -- the base URL of attachments](#)
- [PUBURLPATH -- the base URL path of attachments](#)
- [QUERYSTRING -- full, unprocessed string of parameters to this URL](#)
- [REMOTE_ADDR -- environment variable](#)
- [REMOTE_PORT -- environment variable](#)
- [REMOTE_USER -- environment variable](#)
- [REVINFO -- revision information of current topic](#)
- [REVINFO{"format"} -- formatted revision information of topic](#)
- [SCRIPTNAME -- name of current script](#)
- [SCRIPTSUFFIX -- script suffix](#)
- [SCRIPTURL -- base URL of TWiki scripts](#)
- [SCRIPTURL{"script"} -- URL of TWiki script](#)
- [SCRIPTURLPATH -- base URL path of TWiki scripts](#)
- [SCRIPTURLPATH{"script"} -- URL path of TWiki script](#)

- [SEARCH{"text"} -- search content](#)
- [SERVERTIME -- server time](#)
- [SERVERTIME{"format"} -- formatted server time](#)
- [SESSIONID -- unique ID for this session](#)
- [SESSIONVAR -- name of CGI and session variable that stores the session ID](#)
- [SESSION_VARIABLE -- get, set or clear a session variable](#)
- [SPACEDTOPIC -- topic name, spaced and URL-encoded deprecated](#)
- [SPACEOUT{"string"} -- renders string with spaces inserted in sensible places](#)
- [STARTINCLUDE -- start position of topic text if included](#)
- [STARTSECTION -- marks the start of a section within a topic](#)
- [STATISTICSTOPIC -- name of statistics topic](#)
- [STOPINCLUDE -- end position of topic text if included](#)
- [TOC -- table of contents of current topic](#)
- [TOC{"Topic"} -- table of contents](#)
- [TOPIC -- name of current topic](#)
- [TOPICLIST{"format"} -- topic index of a web](#)
- [TWIKIWEB -- name of TWiki documentation web](#)
- [URLPARAM{"name"} -- get value of a URL parameter](#)
- [USERINFO - retrieve details about the logged in user](#)
- [USERNAME -- your login username](#)
- [VAR{"NAME" web="Web"} -- get a preference value from another web](#)
- [WEB -- name of current web](#)
- [WEBLIST{"format"} -- index of all webs](#)
- [WEBPREFSTOPIC -- name of web preferences topic](#)
- [WIKIHOMEURL -- site home URL deprecated](#)
- [WIKINAME -- your Wiki username](#)
- [WIKIPREFSTOPIC -- name of site-wide preferences topic](#)
- [WIKITOOLNAME -- name of your TWiki site](#)
- [WIKIUSERNAME -- your Wiki username with web prefix](#)
- [WIKIUSERSTOPIC -- name of topic listing all registers users](#)
- [WIKIVERSION -- the version of the installed TWiki engine](#)

- [TWiki Formatted Search](#)

- [Syntax](#)
- [Examples](#)
 - [Bullet list showing topic name and summary](#)
 - [Table showing form field values of topics with a form](#)
 - [Extract some text from a topic using regular expression](#)
 - [Nested Search](#)
 - [Most recently changed pages](#)
 - [Search with conditional output](#)
 - [Embedding search forms to return a formatted result](#)

- [File Attachments](#)

- [What Are Attachments Good For?](#)
 - [Document Management System](#)
 - [File Sharing](#)
 - [Web Authoring](#)
- [Uploading Files](#)
- [Downloading Files](#)
- [Moving Attachment Files](#)
- [Deleting Attachments](#)
- [Linking to Attached Files](#)
- [File Attachment Contents Table](#)
- [File Attachment Controls](#)
- [Known Issues](#)

- [TWiki Forms](#)
 - [Overview](#)
 - [Defining a Form Template](#)
 - [Form Template Elements](#)
 - [Defining a Form](#)
 - [Enabling Forms by Web](#)
 - [Add a form to a topic](#)
 - [Build an HTML form to create new Form-based topics](#)
 - [Changing a form](#)
 - [Searching for Form Data](#)
 - [Extending the range of form data types](#)
 - [Gotcha!](#)
 - [Importing Category Table Data](#)
- [TWiki Templates](#)
 - [Overview](#)
 - [The TWiki Template System](#)
 - [How Template Directives Work](#)
 - [Finding Templates](#)
 - [Master Templates](#)
 - [HTML Page Templates](#)
 - [Template Topics](#)
 - [Edit Template Topics and Variable Expansion](#)
 - [Template Topics in Action](#)
 - [Automatically Generated Topicname](#)
 - [Master Templates by Example](#)
 - [Base template oopsbase.tmpl](#)
 - [Test template oopstest.tmpl](#)
 - [Sample screen shot of oopstest.tmpl](#)
- [TWiki Skins](#)
 - [Overview](#)
 - [Changing the default TWiki skin](#)
 - [Defining Skins](#)
 - [Variables in Skins](#)
 - [The "Go" Box and Navigation Box](#)
 - [Using Cascading Style Sheets](#)
 - [Attachment Tables](#)
 - [Packaging and Publishing Skins](#)
 - [Browsing Installed Skins](#)
 - [Activating Skins](#)
 - [Hard-Coded Skins](#)
- [TWiki Meta Data](#)
 - [Overview](#)
 - [Meta Data Syntax](#)
 - [Meta Data Specifications](#)
 - [META:TOPICINFO](#)
 - [META:TOPICMOVED](#)
 - [META:TOPICPARENT](#)
 - [META:FILEATTACHMENT](#)
 - [META:FORM](#)
 - [META:FIELD](#)
 - [Recommended Sequence](#)
 - [Viewing Meta Data in Page Source](#)
 - [Rendering Meta Data](#)
 - [Known Issues](#)

- [TWiki Plugins](#)
 - [Overview](#)
 - [Installing Plugins](#)
 - [On-Site Pretesting](#)
 - [Some Notes on Plugin Performance](#)
 - [Managing Installed Plugins](#)
 - [Enabling Plugins](#)
 - [Plugin Evaluation Order](#)
 - [Plugin-Specific Settings](#)
 - [Listing Active Plugins](#)
 - [%ACTIVATEDPLUGINS%](#)
 - [%PLUGINDESCRIPTIONS%](#)
 - [%FAILEDPLUGINS%](#)
 - [The TWiki Plugin API](#)
 - [Available Core Functions](#)
 - [Predefined Hooks](#)
 - [Hints on Writing Fast Plugins](#)
 - [Plugin Version Detection](#)
 - [Security](#)
 - [Creating Plugins](#)
 - [Anatomy of a Plugin](#)
 - [Creating the Perl Module](#)
 - [Measuring and Improving the Plugin Performance](#)
 - [Writing the Documentation Topic](#)
 - [Packaging for Distribution](#)
 - [Publishing for Public Use](#)
 - [Recommended Storage of Plugin Specific Data](#)
 - [Plugin Internal Data](#)
 - [Web Accessible Data](#)
 - [Maintaining Plugins](#)
 - [Discussions and Feedback on Plugins](#)
 - [Maintaining Compatibility with Earlier TWiki Versions](#)
 - [Handling deprecated functions](#)
 - [Environment](#)
 - [getSkin\(\) -> \\$skin](#)
 - [getUrlHost\(\) -> \\$host](#)
 - [getScriptUrl\(\\$web, \\$topic, \\$script, ... \) -> \\$url](#)
 - [getViewUrl\(\\$web, \\$topic \) -> \\$url](#)
 - [getOpsUrl\(\\$web, \\$topic, \\$template, \\$param1, \\$param2, \\$param3, \\$param4 \) -> \\$url](#)
 - [getPubUrlPath\(\) -> \\$path](#)
 - [getCgiQuery\(\) -> \\$query](#)
 - [getSessionValue\(\\$key \) -> \\$value](#)
 - [setSessionValue\(\\$key, \\$value \) -> \\$boolean](#)
 - [clearSessionValue\(\\$key \) -> \\$boolean](#)
 - [getContext\(\) -> \%hash](#)
 - [Preferences](#)
 - [getPreferencesValue\(\\$key, \\$web \) -> \\$value](#)
 - [getPluginPreferencesValue\(\\$key \) -> \\$value](#)
 - [getPreferencesFlag\(\\$key, \\$web \) -> \\$value](#)
 - [getPluginPreferencesFlag\(\\$key \) -> \\$boolean](#)
 - [getWikiToolName\(\) -> \\$name](#)
 - [getMainWebname\(\) -> \\$name](#)
 - [getTwikiWebname\(\) -> \\$name](#)
 - [User Handling and Access Control](#)

- [getDefaultUserName\(\) -> \\$loginName](#)
- [getWikiName\(\) -> \\$wikiName](#)
- [getWikiUserName\(\) -> \\$wikiName](#)
- [wikiToUserName\(\\$wikiName \) -> \\$loginName](#)
- [userToWikiName\(\\$loginName, \\$dontAddWeb \) -> \\$wikiName](#)
- [isGuest\(\) -> \\$boolean](#)
- [permissionsSet\(\\$web \) -> \\$boolean](#)
- [checkAccessPermission\(\\$type, \\$wikiName, \\$text, \\$topic, \\$web \) -> \\$boolean](#)
- [Webs, Topics and Attachments](#)
 - [getListOfWebs\(\\$filter \) -> @webs](#)
 - [webExists\(\\$web \) -> \\$boolean](#)
 - [createWeb\(\\$newWeb, \\$baseWeb, \\$opts \)](#)
 - [moveWeb\(\\$oldName, \\$newName \)](#)
 - [getTopicList\(\\$web \) -> @topics](#)
 - [topicExists\(\\$web, \\$topic \) -> \\$boolean](#)
 - [checkTopicEditLock\(\\$web, \\$topic \) -> \(\\$oopsUrl, \\$loginName, \\$unlockTime \)](#)
 - [setTopicEditLock\(\\$web, \\$topic, \\$lock \)](#)
 - [saveTopic\(\\$web, \\$topic, \\$meta, \\$text, \\$options \) -> \\$error](#)
 - [saveTopicText\(\\$web, \\$topic, \\$text, \\$ignorePermissions, \\$dontNotify \) -> \\$oopsUrl](#)
 - [moveTopic\(\\$web, \\$topic, \\$newWeb, \\$newTopic \)](#)
 - [getRevisionInfo\(\\$web, \\$topic, \\$rev, \\$attachment \) -> \(\\$date, \\$user, \\$rev, \\$comment \)](#)
 - [getRevisionAtTime\(\\$web, \\$topic, \\$time \) -> \\$rev](#)
 - [readTopic\(\\$web, \\$topic, \\$rev \) -> \(\\$meta, \\$text \)](#)
 - [readTopicText\(\\$web, \\$topic, \\$rev, \\$ignorePermissions \) -> \\$text](#)
 - [attachmentExists\(\\$web, \\$topic, \\$attachment \) -> \\$boolean](#)
 - [readAttachment\(\\$web, \\$topic, \\$name, \\$rev \) -> \\$data](#)
 - [saveAttachment\(\\$web, \\$topic, \\$attachment, \\$opts \)](#)
 - [moveAttachment\(\\$web, \\$topic, \\$attachment, \\$newWeb, \\$newTopic, \\$newAttachment \)](#)
- [Assembling Pages](#)
 - [readTemplate\(\\$name, \\$skin \) -> \\$text](#)
 - [loadTemplate \(\\$name, \\$skin, \\$web \) -> \\$text](#)
 - [expandTemplate\(\\$def \) -> \\$string](#)
 - [writeHeader\(\\$query, \\$contentLength \)](#)
 - [redirectCgiQuery\(\\$query, \\$url \)](#)
 - [addToHEAD\(\\$id, \\$header \)](#)
 - [expandCommonVariables\(\\$text, \\$topic, \\$web \) -> \\$text](#)
 - [renderText\(\\$text, \\$web \) -> \\$text](#)
 - [internalLink\(\\$pre, \\$web, \\$topic, \\$label, \\$anchor, \\$createLink \) -> \\$text](#)
- [E-mail](#)
 - [sendEmail \(\\$text, \\$retries \) -> \\$error](#)
 - [wikiToEmail\(\\$wikiName \) -> \\$email](#)
- [Creating New Topics](#)
 - [expandVariablesOnTopicCreation \(\\$text \) -> \\$text](#)
- [Special handlers](#)
 - [registerTagHandler\(\\$var, \&fn, \\$syntax \)](#)
 - [registerREStHandler\(\\$alias, \&fn, \)](#)
- [Searching](#)
 - [searchInWebContent\(\\$searchString, \\$web, \@topics, \%options \) -> \%map](#)
- [Plugin-specific file handling](#)
 - [getWorkArea\(\\$pluginName \) -> \\$directorypath](#)
 - [readFile\(\\$filename \) -> \\$text](#)
 - [saveFile\(\\$filename, \\$text \)](#)
- [General Utilities](#)
 - [getRegularExpression\(\\$name \) -> \\$expr](#)

- [normalizeWebTopicName\(\\$web, \\$topic\) -> \(\\$web, \\$topic\)](#)
 - [writeWarning\(\\$text \)](#)
 - [writeDebug\(\\$text \)](#)
 - [formatTime\(\\$time, \\$format, \\$timezone \) -> \\$text](#)
 - [isValidWikiWord \(\\$text \) -> \\$boolean](#)
 - [extractParameters\(\\$attr \) -> %params](#)
 - [extractNameValuePair\(\\$attr, \\$name \) -> \\$value](#)
- [Deprecated functions](#)
 - [getScriptUrlPath\(\) -> \\$path](#)
 - [getPublicWebList\(\) -> @webs](#)
 - [formatGmTime\(\\$time, \\$format \) -> \\$text](#)
 - [getDataDir\(\) -> \\$dir](#)
 - [getPubDir\(\) -> \\$dir](#)
 - [checkDependencies\(\\$moduleName, \\$dependenciesRef \) -> \\$error](#)
- [TWiki CGI and Command Line Scripts](#)
 - [CGI Scripts](#)
 - [General Information](#)
 - [CGI environment](#)
 - [Command-line](#)
 - [Common parameters](#)
 - [attach](#)
 - [changes](#)
 - [configure](#)
 - [edit](#)
 - [login](#)
 - [logon](#)
 - [manage](#)
 - [action=createweb](#)
 - [action=deleteUserAccount](#)
 - [action=editSettings](#)
 - [action=bulkRegister](#)
 - [action=saveSettings](#)
 - [oops](#)
 - [passwd](#)
 - [action=changePassword](#)
 - [preview](#)
 - [rdiff](#)
 - [register](#)
 - [rename](#)
 - [resetpasswd](#)
 - [rest](#)
 - [Invocation Examples](#)
 - [save](#)
 - [search](#)
 - [statistics](#)
 - [twiki](#)
 - [upload](#)
 - [view](#)
 - [viewfile](#)
 - [Command Line Scripts](#)
 - [geturl.pl](#)
 - [rewriteshebang.pl](#)
 - [tick_twiki.pl](#)
- [TWiki Site Tools](#)

- [WebNotify - recent changes alert](#)
 - [Web Changes Notification Service](#)
 - [WebSearch - search TWiki site](#)
 - [WebChanges - what's new](#)
 - [WebIndex - list of topics](#)
 - [WebStatistics - site statistics](#)
 - [Configuring for automatic operation](#)
 - [Generating statistics manually by URL](#)
 - [Log Files](#)
 - [E-mail](#)
 - [Configuring outgoing mail](#)
 - [Setting the automatic e-mail schedule](#)
 - [Site Permissions](#)
- [Managing Topics](#)
 - [Overview](#)
 - [How to Rename/Move/Delete a Topic](#)
 - [Deleted Topics: How to Clear the Trash](#)
 - [Redirecting from an Old Topic](#)
 - [How Rename/Move Works](#)
 - [How Referring Topics Are Found](#)
 - [Effect of User Access Settings](#)
 - [Special Considerations](#)
 - [Known Issues](#)
- [Managing Webs](#)
 - [Overview](#)
 - [Choose Web Template](#)
 - [Adding a New Web](#)
 - [Renaming or Deleting a Web](#)
 - [Permissions](#)
 - [Edit Conflicts](#)
 - [Renaming the webs in the distribution](#)
 - [Hierarchical Webs](#)
 - [Subweb Preferences are Inherited](#)
 - [Navigation](#)
- [Manage Users](#)
 - [Authentication and Access Control](#)
 - [Register User](#)
 - [Change, Reset and Install Passwords](#)
 - [Removing User Accounts](#)
- [Appendix A: TWiki Development Timeline](#)
 - [TWiki Release 4.0.0 \(Dakar\), 01 Feb 2006](#)
 - [01-Sep-2004 Release \(Cairo\)](#)
 - [01-Feb-2003 Release \(Beijing\)](#)
 - [01-Dec-2001 Release \(Athens\)](#)
 - [01-Sep-2001 Release](#)
 - [01-Dec-2000 Release](#)
 - [01-May-2000 Release](#)
 - [01-Sep-1999 Release](#)
 - [01-Jul-1999 Release](#)
 - [1998 Releases](#)
 - [Dev Flow](#)
- [Appendix B: Encode URLs With UTF8](#)
 - [Current Status](#)
 - [Details of Implementation](#)

- [Testing and Limitation](#)
- [Appendix C: TWiki CSS](#)
 - [Who should read this document?](#)
 - [Naming conventions](#)
 - [TWiki styles in core code](#)
 - [TWiki Styles in Plugins](#)
 - [TWiki Styles in Templates](#)
 - [TWiki Styles in topics](#)
 - [Tips](#)

Environment

getSkin() -> \$skin

Get the skin path, set by the SKIN and COVER preferences variables or the skin and cover CGI parameters

Return: \$skin Comma-separated list of skins, e.g. 'gnu,tartan'. Empty string if none.

Since: TWiki::Plugins::VERSION 1.000 (29 Jul 2001)

getUrlHost() -> \$host

Get protocol, domain and optional port of script URL

Return: \$host URL host, e.g. "http://example.com:80"

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

getScriptUrl(\$web, \$topic, \$script, ...) -> \$url

Compose fully qualified URL

- \$web - Web name, e.g. 'Main'
- \$topic - Topic name, e.g. 'WebNotify'
- \$script - Script name, e.g. 'view'

Return: \$url URL, e.g. "http://example.com:80/cgi-bin/view.pl/Main/WebNotify"

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

getViewUrl(\$web, \$topic) -> \$url

Compose fully qualified view URL

- \$web - Web name, e.g. 'Main'. The current web is taken if empty
- \$topic - Topic name, e.g. 'WebNotify'

Return: \$url URL, e.g. "http://example.com:80/cgi-bin/view.pl/Main/WebNotify"

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

getOopsUrl(\$web, \$topic, \$template, \$param1, \$param2, \$param3, \$param4) -> \$url

Compose fully qualified 'oops' dialog URL

- \$web - Web name, e.g. 'Main'. The current web is taken if empty

- **\$topic** - Topic name, e.g. 'WebNotify'
- **\$template** - Oops template name, e.g. 'oopsmistake'. The 'oops' is optional; 'mistake' will translate to 'oopsmistake'.
- **\$param1 ... \$param4** - Parameter values for %PARAM1% ... %PARAMn% variables in template, optional

Return: \$url URL, e.g. "http://example.com:80/cgi-bin/oops.pl/ Main/WebNotify?template=oopslocked¶m1=joe"

This might be used like this:

```
my $url = Twiki::Func::getOopsUrl($web, $topic, 'oopsmistake', 'I made a boo-boo');
Twiki::Func::redirectCgiQuery( undef, $url );
return 0;
```

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

Since TWiki::Plugins::VERSION 1.1, the recommended approach is to throw an [oops exception](#).

```
use Error qw( :try );

throw Twiki::OopsException($web, $topic, undef, 0, [ 'I made a boo-boo' ]);
```

and let TWiki handle the cleanup.

getPubUrlPath() -> \$path

Get pub URL path

Return: \$path URL path of pub directory, e.g. "/pub"

Since: TWiki::Plugins::VERSION 1.000 (14 Jul 2001)

getCgiQuery() -> \$query

Get CGI query object. Important: Plugins cannot assume that scripts run under CGI, Plugins must always test if the CGI query object is set

Return: \$query CGI query object; or 0 if script is called as a shell script

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

getSessionValue(\$key) -> \$value

Get a session value from the client session module

- **\$key** - Session key

Return: \$value Value associated with key; empty string if not set

Since: TWiki::Plugins::VERSION 1.000 (27 Feb 200)

setSessionValue(\$key, \$value) -> \$boolean

Set a session value via the client session module

- **\$key** - Session key
- **\$value** - Value associated with key

Return: true if function succeeded

Since: TWiki::Plugins::VERSION 1.000 (17 Aug 2001)

clearSessionValue(\$key) -> \$boolean

Clear a session value via the client session module

- \$key - Session key

Return: true if function succeeded

Since: TWiki::Plugins::VERSION 1.1

getContext() -> \%hash

Get a hash of context identifiers representing the currently active context.

The context is a set of identifiers that are set during specific phases of TWiki processing. For example, each of the standard scripts in the 'bin' directory each has a context identifier - the view script has 'view', the edit script has 'edit' etc. So you can easily tell what 'type' of script your Plugin is being called within. The core context identifiers are listed in the [TWikiTemplates](#) topic. Please be careful not to overwrite any of these identifiers!

Context identifiers can be used to communicate between Plugins, and between Plugins and templates. For example, in [FirstPlugin?](#) pm, you might write:

```
sub initPlugin {
    Twiki::Func::getContext()->{'MyID'} = 1;
    ...
}
```

This can be used in SecondPlugin.pm like this:

```
sub initPlugin {
    if( Twiki::Func::getContext()->{'MyID'} ) {
        ...
    }
    ...
}
```

or in a template, like this:

```
%TMPL:DEF{"ON"}% Not off %TMPL:END%
%TMPL:DEF{"OFF"}% Not on %TMPL:END%
%TMPL:P{context="MyID" then="ON" else="OFF"}%
```

or in a topic:

```
%IF{"context MyID" then="MyID is ON" else="MyID is OFF"}%
```

Note: all plugins have an **automatically generated** context identifier if they are installed and initialised. For example, if the [FirstPlugin?](#) is working, the context ID 'FirstPlugin' will be set.

Since: TWiki::Plugins::VERSION 1.1

Preferences

getPreferencesValue(\$key, \$web) -> \$value

Get a preferences value from TWiki or from a Plugin

- **\$key** - Preferences key
- **\$web** - Name of web, optional. Current web if not specified; does not apply to settings of Plugin topics

Return: **\$value** Preferences value; empty string if not set

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

- Example for Plugin setting:
 - MyPlugin[?] topic has: * Set COLOR = red
 - Use "MYPLUGIN_COLOR" for \$key
 - my \$color = TWiki::Func::getPreferencesValue("MYPLUGIN_COLOR");
- Example for preferences setting:
 - [WebPreferences](#) topic has: * Set WEBBGCOLOR = #FFFC0
 - my \$webColor = TWiki::Func::getPreferencesValue('WEBBGCOLOR', 'Sandbox');

getPluginPreferencesValue(\$key) -> \$value

Get a preferences value from your Plugin

- **\$key** - Plugin Preferences key w/o PLUGINNAME_ prefix.

Return: **\$value** Preferences value; empty string if not set

Note: This function will will **only** work when called from the Plugin.pm file itself. it **will not work** if called from a sub-package (e.g. TWiki::Plugins::MyPlugin::MyModule)

Since: TWiki::Plugins::VERSION 1.021 (27 Mar 2004)

getPreferencesFlag(\$key, \$web) -> \$value

Get a preferences flag from TWiki or from a Plugin

- **\$key** - Preferences key
- **\$web** - Name of web, optional. Current web if not specified; does not apply to settings of Plugin topics

Return: **\$value** Preferences flag '1' (if set), or "0" (for preferences values "off", "no" and "0")

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

- Example for Plugin setting:
 - MyPlugin[?] topic has: * Set SHOWHELP = off
 - Use "MYPLUGIN_SHOWHELP" for \$key
 - my \$showHelp = TWiki::Func::getPreferencesFlag("MYPLUGIN_SHOWHELP");

getPluginPreferencesFlag(\$key) -> \$boolean

Get a preferences flag from your Plugin

- **\$key** - Plugin Preferences key w/o PLUGINNAME_ prefix.

Return: false for preferences values "off", "no" and "0", or values not set at all. True otherwise.

Note: This function will will **only** work when called from the Plugin.pm file itself. it **will not work** if called from a sub-package (e.g. TWiki::Plugins::MyPlugin::MyModule)

Since: TWiki::Plugins::VERSION 1.021 (27 Mar 2004)

getWikiToolName() -> \$name

Get toolname as defined in TWiki.cfg

Return: \$name Name of tool, e.g. 'Twiki'

Synonymous with TWiki::Func::getPreferencesValue('WIKITOOLNAME');

Since: TWiki::Plugins::VERSION 1.000 (27 Feb 2001)

getMainWebname() -> \$name

Get name of Main web as defined in TWiki.cfg

Return: \$name Name, e.g. 'Main'

Synonymous with TWiki::Func::getPreferencesValue('MAINWEB');

Since: TWiki::Plugins::VERSION 1.000 (27 Feb 2001)

getTwikiWebname() -> \$name

Get name of TWiki documentation web as defined in TWiki.cfg

Return: \$name Name, e.g. 'Twiki'

Synonymous with TWiki::Func::getPreferencesValue('TWIKIWEB');

Since: TWiki::Plugins::VERSION 1.000 (27 Feb 2001)

User Handling and Access Control

getDefaultUserName() -> \$loginName

Get default user name as defined in the configuration as DefaultUserLogin

Return: \$loginName Default user name, e.g. 'guest'

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

getWikiName() -> \$wikiName

Get Wiki name of logged in user

Return: \$wikiName Wiki Name, e.g. 'JohnDoe'

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

getWikiUserName() -> \$wikiName

Get Wiki name of logged in user with web prefix

Return: \$wikiName Wiki Name, e.g. "Main.JohnDoe"

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

wikiToUserName(\$wikiName) -> \$loginName

Translate a Wiki name to a login name based on [Main.TWikiUsers](#) topic

- \$wikiName - Wiki name, e.g. 'Main.JohnDoe' or 'JohnDoe'

Return: \$loginName Login name of user, e.g. 'jdoe'

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

userToWikiName(\$loginName, \$dontAddWeb) -> \$wikiName

Translate a login name to a Wiki name based on [Main.TWikiUsers](#) topic

- \$loginName - Login name, e.g. 'jdoe'
- \$dontAddWeb - Do not add web prefix if "1"

Return: \$wikiName Wiki name of user, e.g. 'Main.JohnDoe' or 'JohnDoe'

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

isGuest() -> \$boolean

Test if logged in user is a guest (TWikiGuest[?])

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

permissionsSet(\$web) -> \$boolean

Test if any access restrictions are set for this web, ignoring settings on individual pages

- \$web - Web name, required, e.g. 'Sandbox'

Since: TWiki::Plugins::VERSION 1.000 (27 Feb 2001)

checkAccessPermission(\$type, \$wikiName, \$text, \$topic, \$web) -> \$boolean

Check access permission for a topic based on the [TWiki04.TWikiAccessControl](#) rules

- \$type - Access type, e.g. 'VIEW', 'CHANGE', 'CREATE'
- \$wikiName - [WikiName](#) of remote user, i.e. "Main.PeterThoeny"
- \$text - Topic text, optional. If empty, topic \$web.\$topic is consulted
- \$topic - Topic name, required, e.g. 'PrivateStuff'
- \$web - Web name, required, e.g. 'Sandbox'

Since: TWiki::Plugins::VERSION 1.000 (27 Feb 2001)

Webs, Topics and Attachments

getListOfWebs(\$filter) -> @webs

- \$filter - spec of web types to recover

Gets a list of webs, filtered according to the spec in the \$filter, which may include one of:

1. 'user' (for only user webs)
2. 'template' (for only template webs i.e. those starting with "_")

`$filter` may also contain the word 'public' which will further filter out webs that have NOSEARCHALL set on them. 'allowed' filters out webs the current user can't read.

For example, the deprecated `getPublicWebList` function can be duplicated as follows:

```
my @webs = TWiki::Func::getListOfWebs( "user,public" );
```

Since: TWiki::Plugins::VERSION 1.1

webExists(\$web) -> \$boolean

Test if web exists

- `$web` - Web name, required, e.g. 'Sandbox'

Since: TWiki::Plugins::VERSION 1.000 (14 Jul 2001)

createWeb(\$newWeb, \$baseWeb, \$opts)

- `$newWeb` is the name of the new web.
- `$baseWeb` is the name of an existing web (a template web). If the base web is a system web, all topics in it will be copied into the new web. If it is a normal web, only topics starting with 'Web' will be copied. If no base web is specified, an empty web (with no topics) will be created. If it is specified but does not exist, an error will be thrown.
- `$opts` is a ref to a hash that contains settings to be modified in

the web preferences topic in the new web.

```
use Error qw( :try );
use TWiki::AccessControlException;

try {
    TWiki::Func::createWeb( "Newweb" );
} catch Error::Simple with {
    my $e = shift;
    # see documentation on Error::Simple
} catch TWiki::AccessControlException with {
    my $e = shift;
    # see documentation on TWiki::AccessControlException
} otherwise {
    ...
};
```

Since: TWiki::Plugins::VERSION 1.1

moveWeb(\$oldName, \$newName)

Move (rename) a web.

```
use Error qw( :try );
use TWiki::AccessControlException;

try {
    TWiki::Func::moveWeb( "Oldweb", "Newweb" );
} catch Error::Simple with {
```

```

    my $e = shift;
    # see documentation on Error::Simple
} catch TWiki::AccessControlException with {
    my $e = shift;
    # see documentation on TWiki::AccessControlException
} otherwise {
    ...
};

```

To delete a web, move it to a subweb of Trash

```
TWiki::Func::moveWeb( "Deadweb", "Trash.Deadweb" );
```

Since: TWiki::Plugins::VERSION 1.1

getTopicList(\$web) -> @topics

Get list of all topics in a web

- **\$web** - Web name, required, e.g. 'Sandbox'

Return: @topics Topic list, e.g. ('WebChanges', 'WebHome', 'WebIndex', 'WebNotify')

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

topicExists(\$web, \$topic) -> \$boolean

Test if topic exists

- **\$web** - Web name, optional, e.g. 'Main'.
- **\$topic** - Topic name, required, e.g. 'TokyoOffice', or "Main.TokyoOffice"

\$web and **\$topic** are parsed as described in the documentation for `normalizeWebTopicName`.

Since: TWiki::Plugins::VERSION 1.000 (14 Jul 2001)

checkTopicEditLock(\$web, \$topic) -> (\$oopsUrl, \$loginName, \$unlockTime)

Check if a lease has been taken by some other user.

- **\$web** Web name, e.g. "Main", or empty
- **\$topic** Topic name, e.g. "MyTopic", or "Main.MyTopic"

Return: (\$oopsUrl, \$loginName, \$unlockTime) - The \$oopsUrl for calling `redirectCgiQuery()`, user's \$loginName, and estimated \$unlockTime in minutes, or ("", 0) if no lease exists.

Since: TWiki::Plugins::VERSION 1.010 (31 Dec 2002)

setTopicEditLock(\$web, \$topic, \$lock)

- **\$web** Web name, e.g. "Main", or empty
- **\$topic** Topic name, e.g. "MyTopic", or "Main.MyTopic"
- **\$lock** 1 to lease the topic, 0 to clear the lease=

Takes out a "lease" on the topic. The lease doesn't prevent anyone from editing and changing the topic, but it does redirect them to a warning screen, so this provides some protection. The `edit` script always takes out a lease.

It is **impossible** to fully lock a topic. Concurrent changes will be merged.

Since: TWiki::Plugins::VERSION 1.010 (31 Dec 2002)

saveTopic(\$web, \$topic, \$meta, \$text, \$options) -> \$error

- \$web - web for the topic
- \$topic - topic name
- \$meta - reference to TWiki::Meta object
- \$text - text of the topic (without embedded meta-data!!!)
- \%options - ref to hash of save options \%options may include:

dontlog don't log this change in twiki log

comment comment for save

minor	True if this is a minor change, and is not to be notified
-------	---

Return: error message or undef.

Since: TWiki::Plugins::VERSION 1.000 (29 Jul 2001)

For example,

```
my( $meta, $text ) = TWiki::Func::readTopic( $web, $topic )
$text =~ s/APPLE/ORANGE/g;
TWiki::Func::saveTopic( $web, $topic, $meta, $text, { comment => 'refruited' } );
```

Note: Plugins handlers (e.g. beforeSaveHandler) will be called as appropriate.

saveTopicText(\$web, \$topic, \$text, \$ignorePermissions, \$dontNotify) -> \$oopsUrl

Save topic text, typically obtained by readTopicText(). Topic data usually includes meta data; the file attachment meta data is replaced by the meta data from the topic file if it exists.

- \$web - Web name, e.g. 'Main', or empty
- \$topic - Topic name, e.g. 'MyTopic', or "Main.MyTopic"
- \$text - Topic text to save, assumed to include meta data
- \$ignorePermissions - Set to "1" if checkAccessPermission() is already performed and OK
- \$dontNotify - Set to "1" if not to notify users of the change

Return: \$oopsUrl Empty string if OK; the \$oopsUrl for calling redirectCgiQuery() in case of error

This method is a lot less efficient and much more dangerous than saveTopic.

Since: TWiki::Plugins::VERSION 1.010 (31 Dec 2002)

```
my $text = TWiki::Func::readTopicText( $web, $topic );

# check for oops URL in case of error:
if( $text =~ /^http.*?\s/oops/ ) {
    TWiki::Func::redirectCgiQuery( $query, $text );
    return;
}
# do topic text manipulation like:
$text =~ s/old/new/g;
# do meta data manipulation like:
$text =~ s/(META\:FIELD.*?name\=\"TopicClassification\".*?value\=\")[^\"]*/$1BugResolved/;
$oopsUrl = TWiki::Func::saveTopicText( $web, $topic, $text ); # save topic text
```

moveTopic(\$web, \$topic, \$newWeb, \$newTopic)

- \$web source web - required
- \$topic source topic - required
- \$newWeb dest web
- \$newTopic dest topic

Renames the topic. Throws an exception if something went wrong. If \$newWeb is undef, it defaults to \$web. If \$newTopic is undef, it defaults to \$topic.

The destination topic must not already exist.

Rename a topic to the \$TWiki::cfg{TrashWebName} to delete it.

Since: TWiki::Plugins::VERSION 1.1

```
use Error qw( :try );

try {
    moveTopic( "Work", "TokyoOffice", "Trash", "ClosedOffice" );
} catch Error::Simple with {
    my $e = shift;
    # see documentation on Error::Simple
} catch TWiki::AccessControlException with {
    my $e = shift;
    # see documentation on TWiki::AccessControlException
} otherwise {
    ...
};
```

getRevisionInfo(\$web, \$topic, \$rev, \$attachment) -> (\$date, \$user, \$rev, \$comment)

Get revision info of a topic or attachment

- \$web - Web name, optional, e.g. 'Main'
- \$topic - Topic name, required, e.g. 'TokyoOffice'
- \$rev - revision number, or tag name (can be in the format 1.2, or just the minor number)
- \$attachment -attachment filename

Return: (\$date, \$user, \$rev, \$comment) List with: (last update date, login name of last user, minor part of top revision number), e.g. (1234561, 'phoeny', "5")

\$date	in epochSec
\$user	Wiki name of the author (not login name)
\$rev	actual rev number
\$comment	WHAT COMMENT?

NOTE: if you are trying to get revision info for a topic, use \$meta->getRevisionInfo instead if you can - it is significantly more efficient, and returns a user object that contains other user information.

NOTE: prior versions of TWiki may under some circumstances have returned the login name of the user rather than the wiki name; the code documentation was totally unclear, and we have been unable to establish the intent. However the wikiname is obviously more useful, so that is what is returned.

Since: TWiki::Plugins::VERSION 1.000 (29 Jul 2001)

getRevisionAtTime(\$web, \$topic, \$time) -> \$rev

Get the revision number of a topic at a specific time.

- `$web` - web for topic
- `$topic` - topic
- `$time` - time (in epoch secs) for the rev

Return: Single-digit revision number, or undef if it couldn't be determined (either because the topic isn't that old, or there was a problem)

Since: TWiki::Plugins::VERSION 1.1

readTopic(\$web, \$topic, \$rev) -> (\$meta, \$text)

Read topic text and meta data, regardless of access permissions.

- `$web` - Web name, required, e.g. 'Main'
- `$topic` - Topic name, required, e.g. 'TokyoOffice'
- `$rev` - revision to read (default latest)

Return: (`$meta`, `$text`) Meta data object and topic text

`$meta` is a perl 'object' of class `TWiki::Meta`. This class is fully documented in the source code documentation shipped with the release, or can be inspected in the `lib/TWiki/Meta.pm` file.

This method **ignores** topic access permissions. You should be careful to use `checkAccessPermissions` to ensure the current user has read access to the topic.

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

readTopicText(\$web, \$topic, \$rev, \$ignorePermissions) -> \$text

Read topic text, including meta data

- `$web` - Web name, e.g. 'Main', or empty
- `$topic` - Topic name, e.g. 'MyTopic', or "Main.MyTopic"
- `$rev` - Topic revision to read, optional. Specify the minor part of the revision, e.g. "5", not "1.5"; the top revision is returned if omitted or empty.
- `$ignorePermissions` - Set to "1" if `checkAccessPermission()` is already performed and OK; an oops URL is returned if user has no permission

Return: `$text` Topic text with embedded meta data; an oops URL for calling `redirectCgiQuery()` is returned in case of an error

This method is more efficient than `readTopic`, but returns meta-data embedded in the text. Plugins authors must be very careful to avoid damaging meta-data. You are recommended to use `readTopic` instead, which is a lot safer..

Since: TWiki::Plugins::VERSION 1.010 (31 Dec 2002)

attachmentExists(\$web, \$topic, \$attachment) -> \$boolean

Test if attachment exists

- `$web` - Web name, optional, e.g. Main.
- `$topic` - Topic name, required, e.g. TokyoOffice, or Main.TokyoOffice
- `$attachment` - attachment name, e.g.=logo.gif=

`$web` and `$topic` are parsed as described in the documentation for `normalizeWebTopicName`.

Since: TWiki::Plugins::VERSION 1.1

readAttachment(\$web, \$topic, \$name, \$rev) -> \$data

- \$web - web for topic
- \$topic - topic
- \$name - attachment name
- \$rev - revision to read (default latest)

Read an attachment from the store for a topic, and return it as a string. The names of attachments on a topic can be recovered from the meta-data returned by `readTopic`. If the attachment does not exist, or cannot be read, `undef` will be returned.

View permission on the topic is required for the read to be successful. Access control violations are flagged by a `TWiki::AccessControlException`. Permissions are checked for the user passed in.

```
my( $meta, $text ) = TWiki::Func::readTopic( $web, $topic );
my @attachments = $meta->find( 'FILEATTACHMENT' );
foreach my $a ( @attachments ) {
    try {
        my $data = TWiki::Func::readAttachment( $meta, $a->{name} );
        ...
    } catch TWiki::AccessControlException with {
    };
}
```

Since: TWiki::Plugins::VERSION 1.1

saveAttachment(\$web, \$topic, \$attachment, \$opts)

- \$web - web for topic
- \$topic - topic to attach to
- \$attachment - name of the attachment
- \$opts - Ref to hash of options

\$opts may include:

dontlog	don't log this change in twiki log
comment	comment for save
hide	if the attachment is to be hidden in normal topic view
stream	Stream of file to upload
file	Name of a file to use for the attachment data. ignored if stream is set. Local file on the server.
filepath	Client path to file
filesize	Size of uploaded data
filedate	Date

Save an attachment to the store for a topic. On success, returns `undef`. If there is an error, an exception will be thrown.

```
try {
    TWiki::Func::saveAttachment( $web, $topic, 'image.gif',
                                { file => 'image.gif',
                                  comment => 'Picture of Health',
                                  hide => 1 } );
} catch Error::Simple with {
    # see documentation on Error
} otherwise {
    ...
};
```

Since: TWiki::Plugins::VERSION 1.1

moveAttachment(\$web, \$topic, \$attachment, \$newWeb, \$newTopic, \$newAttachment)

- \$web source web - required
- \$topic source topic - required
- \$attachment source attachment - required
- \$newWeb dest web
- \$newTopic dest topic
- \$newAttachment dest attachment

Renames the topic. Throws an exception on error or access violation. If \$newWeb is undef, it defaults to \$web. If \$newTopic is undef, it defaults to \$topic. If \$newAttachment is undef, it defaults to \$attachment. If all of \$newWeb, \$newTopic and \$newAttachment are undef, it is an error.

The destination topic must already exist, but the destination attachment must **not** exist.

Rename an attachment to \$TWiki::cfg{TrashWebName}.TrashAttament to delete it.

```
use Error qw( :try );
```

```
try {
    # move attachment between topics
    moveAttachment( "Countries", "Germany", "AlsaceLorraine.dat",
                    "Countries", "France" );
    # Note destination attachment name is defaulted to the same as source
} catch TWiki::AccessControlException with {
    my $e = shift;
    # see documentation on TWiki::AccessControlException
} catch Error::Simple with {
    my $e = shift;
    # see documentation on Error::Simple
};
```

Since: TWiki::Plugins::VERSION 1.1

Assembling Pages

readTemplate(\$name, \$skin) -> \$text

Read a template or skin. Embedded [template directives](#) get expanded

- \$name - Template name, e.g. 'view'
- \$skin - Comma-separated list of skin names, optional, e.g. 'print '

Return: \$text Template text

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

loadTemplate (\$name, \$skin, \$web) -> \$text

- \$name - template file name
- \$skin - comma-separated list of skins to use (default: current skin)
- \$web - the web to look in for topics that contain templates (default: current web)

Return: expanded template text (what's left after removal of all %TMPL:DEF% statements)

Since: TWiki::Plugins::VERSION 1.1

Reads a template and extracts template definitions, adding them to the list of loaded templates, overwriting any previous definition.

How TWiki searches for templates is described in [TWikiTemplates](#).

If template text is found, extracts include statements and fully expands them.

expandTemplate(\$def) -> \$string

Do a , only expanding the template (not expanding any variables other than %TMPL)

- **\$def** - template name

Return: the text of the expanded template

Since: TWiki::Plugins::VERSION 1.1

A template is defined using a %TMPL:DEF% statement in a template file. See the documentation on TWiki templates for more information.

writeHeader(\$query, \$contentLength)

Prints a basic content-type HTML header for text/html to standard out

- **\$query** - CGI query object. If not given, the default CGI query will be used. In most cases you should *not* pass this parameter.
- **\$contentLength** - Length of content

Return: none

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

redirectCgiQuery(\$query, \$url)

Redirect to URL

- **\$query** - CGI query object. Ignored, only there for compatibility. The session CGI query object is used instead.
- **\$url** - URL to redirect to

Return: none, never returns

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

addToHEAD(\$id, \$header)

Adds **\$header** to the HTML header (the tag). This is useful for Plugins that want to include some javascript custom css.

- **\$id** - Unique ID to prevent the same HTML from being duplicated. Plugins should use a prefix to prevent name clashes (e.g EDITTABLEPLUGIN_JSCALNDAR)
- **\$header** - the HTML to be added to the section. The HTML must be valid in a HEAD tag - no checks are performed.

All TWiki variables present in **\$header** will be expanded before being inserted into the section.

Note that this is *not* the same as the HTTP header, which is modified through the Plugins `modifyHeaderHandler`.

Since: TWiki::Plugins::VERSION 1.1

example:

```

TWiki::Func::addToHEAD( 'PATTERN_STYLE', '<link id="twikiLayoutCss" rel="stylesheet"
type="text/css" href="%PUBURL%/TWiki/PatternSkin/layout.css" media="all" />' )

```

expandCommonVariables(\$text, \$topic, \$web) -> \$text

Expand all common %VARIABLES%

- \$text - Text with variables to expand, e.g. 'Current user is %WIKIUSER%'
- \$topic - Current topic name, e.g. 'WebNotify'
- \$web - Web name, optional, e.g. 'Main'. The current web is taken if missing

Return: \$text Expanded text, e.g. 'Current user is WikiGuest'

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

See also: expandVariablesOnTopicCreation

renderText(\$text, \$web) -> \$text

Render text from TWiki markup into XHTML as defined in [TWiki04.TextFormattingRules](#)

- \$text - Text to render, e.g. '*bold* text and =fixed font='
- \$web - Web name, optional, e.g. 'Main'. The current web is taken if missing

Return: \$text XHTML text, e.g. 'bold and <code>fixed font</code>'

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

internalLink(\$pre, \$web, \$topic, \$label, \$anchor, \$createLink) -> \$text

Render topic name and link label into an XHTML link. Normally you do not need to call this funtion, it is called internally by `renderText()`

- \$pre - Text occuring before the TWiki link syntax, optional
- \$web - Web name, required, e.g. 'Main'
- \$topic - Topic name to link to, required, e.g. 'WebNotify'
- \$label - Link label, required. Usually the same as \$topic, e.g. 'notify'
- \$anchor - Anchor, optional, e.g. '#Jump'
- \$createLink - Set to '1' to add question linked mark after topic name if topic does not exist; set to '0' to suppress link for non-existing topics

Return: \$text XHTML anchor, e.g. 'notify'

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

E-mail

sendEmail (\$text, \$retries) -> \$error

- \$text - text of the mail, including MIME headers
- \$retries - number of times to retry the send (default 1)

Send an e-mail specified as MIME format content. To specify MIME format mails, you create a string that contains a set of header lines that contain field definitions and a message body such as:

To: liz@windsor.gov.uk

From: serf@hovel.net
CC: george@whitehouse.gov
Subject: Revolution

Dear Liz,

Please abolish the monarchy (with King George's permission, of course)

Thanks,

A. Peasant

Leave a blank line between the last header field and the message body.

Since: TWiki::Plugins::VERSION 1.1

wikiToEmail(\$wikiName) -> \$email

- \$wikiName - wiki name of the user

Get the e-mail address(es) of the named user. If the user has multiple e-mail addresses (for example, the user is a group), then the list will be comma-separated.

Since: TWiki::Plugins::VERSION 1.1

Creating New Topics

expandVariablesOnTopicCreation (\$text) -> \$text

Expand the limited set of variables that are always expanded during topic creation

- \$text - the text to process

Return: text with variables expanded

Since: TWiki::Plugins::VERSION 1.1

Expands only the variables expected in templates that must be statically expanded in new content.

The expanded variables are:

- %DATE% Signature-format date
- %SERVERTIME% See [TWikiVariables](#)
- %GMTIME% See [TWikiVariables](#)
- %USERNAME% Base login name
- %WIKINAME% Wiki name
- %WIKIUSERNAME% Wiki name with prepended web
- %URLPARAM{ . . . }% - Parameters to the current CGI query
- %NOP% No-op

See also: expandVariables

Special handlers

Special handlers can be defined to make functions in plugins behave as if they were built-in to TWiki.

registerTagHandler(\$var, \&fn, \$syntax)

Should only be called from `initPlugin`.

Register a function to handle a simple variable. Handles both `%VAR%` and `%VAR{...}%`. Registered variables are treated the same as TWiki internal variables, and are expanded at the same time. This is a *lot* more efficient than using the `commonTagsHandler`.

- `$var` - The name of the variable, i.e. the 'MYVAR' part of `%MYVAR%`. The variable name **must** match `/^[A-Z][A-Z0-9_]*$/` or it won't work.
- `\&fn` - Reference to the handler function.
- `$syntax` can be 'classic' (the default) or 'context-free'. 'classic' syntax is appropriate where you want the variable to support classic TWiki syntax i.e. to accept the standard `%MYVAR{ "unnamed" param1="value1" param2="value2" }%` syntax, as well as an unquoted default parameter, such as `%MYVAR{unquoted parameter}%`. If your variable will only use named parameters, you can use 'context-free' syntax, which supports a more relaxed syntax. For example, `%MYVAR {param1=value1, value 2, param3="value 3", param4='value 5'}%`

Since: TWiki::Plugins::VERSION 1.1

The variable handler function must be of the form:

```
sub handler(\%session, \%params, $topic, $web)
```

where:

- `\%session` - a reference to the TWiki session object (may be ignored)
- `\%params` - a reference to a TWiki::Attrs object containing parameters. This can be used as a simple hash that maps parameter names to values, with `_DEFAULT` being the name for the default parameter.
- `$topic` - name of the topic in the query
- `$web` - name of the web in the query

for example, to execute an arbitrary command on the server, you might do this:

```
sub initPlugin{
    Twiki::Func::registerTagHandler('EXEC', \&boo);
}

sub boo {
    my( $session, $params, $topic, $web ) = @_;
    my $cmd = $params->{_DEFAULT};

    return "NO COMMAND SPECIFIED" unless $cmd;

    my $result = ` $cmd 2>&1`;
    return $params->{silent} ? '' : $result;
}
}
```

would let you do this: `%EXEC{"ps -Af" silent="on"}%`

registerRESTHandler(\$alias, \&fn,)

Should only be called from `initPlugin`.

Adds a function to the dispatch table of the REST interface

- `$alias` - The name .
- `\&fn` - Reference to the function.

Since: TWiki::Plugins::VERSION 1.1

The handler function must be of the form:

```
sub handler(\%session)
```

where:

- `\%session` - a reference to the TWiki session object (may be ignored)

From the REST interface, the name of the plugin must be used as the subject of the invocation.

Example

The [EmptyPlugin](#) has the following call in the `initPlugin` handler:

```
Twiki::Func::registerREStHandler('example', \&restExample);
```

This adds the `restExample` function to the REST dispatch table for the [EmptyPlugin](#) under the 'example' alias, and allows it to be invoked using the URL

```
http://server:port/bin/rest/EmptyPlugin/example
```

note that the URL

```
http://server:port/bin/rest/EmptyPlugin/restExample
```

(ie, with the name of the function instead of the alias) will not work.

Searching

`searchInWebContent($searchString, $web, \@topics, \%options ) -> \%map`

Search for a string in the content of a web. The search is over all content, including meta-data. Meta-data matches will be returned as formatted lines within the topic content (meta-data matches are returned as lines of the format `%META:\w+{.*}%`)

- `$searchString` - the search string, in `egrep` format
- `$web` - The web to search in
- `\@topics` - reference to a list of topics to search
- `\%option` - reference to an options hash

The `\%options` hash may contain the following options:

- `type` - if `regex` will perform a `egrep-syntax RE` search (default `"`)
- `casesensitive` - false to ignore case (default `true`)
- `files_without_match` - true to return files only (default `false`). If `files_without_match` is specified, it will return on the first match in each topic (i.e. it will return only one match per topic, and will not return matching lines).

The return value is a reference to a hash which maps each matching topic name to a list of the lines in that topic that matched the search, as would be returned by `'grep'`.

To iterate over the returned topics use:

```
my $result = Twiki::Func::searchInWebContent( "Slimy Toad", $web, \@topics,
{ casesensitive => 0, files_without_match => 0 } );
foreach my $topic (keys %$result) {
    foreach my $matching_line ( @{$result->{$topic}} ) {
```

...etc

Since: TWiki::Plugins::VERSION 1.1

Plugin-specific file handling

getWorkArea(\$pluginName) -> \$directorypath

Gets a private directory for Plugin use. The Plugin is entirely responsible for managing this directory; TWiki will not read from it, or write to it.

The directory is guaranteed to exist, and to be writable by the webserver user. By default it will **not** be web accessible.

The directory and it's contents are permanent, so Plugins must be careful to keep their areas tidy.

Since: TWiki::Plugins::VERSION 1.1 (Dec 2005)

readFile(\$filename) -> \$text

Read file, low level. Used for Plugin workarea.

- `$filename` - Full path name of file

Return: `$text` Content of file, empty if not found

NOTE: Use this function only for the Plugin workarea, **not** for topics and attachments. Use the appropriate functions to manipulate topics and attachments.

Since: TWiki::Plugins::VERSION 1.000 (07 Dec 2002)

saveFile(\$filename, \$text)

Save file, low level. Used for Plugin workarea.

- `$filename` - Full path name of file
- `$text` - Text to save

Return: none

NOTE: Use this function only for the Plugin workarea, **not** for topics and attachments. Use the appropriate functions to manipulate topics and attachments.

Since: TWiki::Plugins::VERSION 1.000 (07 Dec 2002)

General Utilities

getRegularExpression(\$name) -> \$expr

Retrieves a TWiki predefined regular expression or character class.

- `$name` - Name of the expression to retrieve. See notes below

Return: String or precompiled regular expression matching as described below.

Since: TWiki::Plugins::VERSION 1.020 (9 Feb 2004)

Note: TWiki internally precompiles several regular expressions to represent various string entities in an I18N-compatible manner. Plugins authors are encouraged to use these in matching where appropriate. The following are guaranteed to be present. Others may exist, but their use is unsupported and they may be removed in future TWiki 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 $upper = TWiki::Func::getRegularExpression('upperAlpha');
my $alpha = TWiki::Func::getRegularExpression('mixedAlpha');
my $capitalized = qr/[$upper][$alpha]+/;
```

Those expressions marked type 'RE' are precompiled regular expressions that can be used outside square brackets. For example:

```
my $webRE = TWiki::Func::getRegularExpression('webNameRegex');
my $isWebName = ( $s =~ m/$webRE/ );
```

<u>Name</u>	<u>Matches</u>	<u>Type</u>
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
anchorRegex	#AnchorNames	RE
abbrevRegex	Abbreviations e.g. GOV, IRS	RE
emailAddrRegex	email@addressPLEASENOSPAM.com	RE
tagNameRegex	Standard variable names e.g. %THIS_BIT% (THIS_BIT only)	RE

normalizeWebTopicName(\$web, \$topic) -> (\$web, \$topic)

Parse a web and topic name, supplying defaults as appropriate.

- \$web - Web name, identifying variable, or empty string
- \$topic - Topic name, may be a web.topic string, required.

Return: the parsed Web/Topic pair

Since: TWiki::Plugins::VERSION 1.1

<u>Input</u>	<u>Return</u>
('web', 'Topic')	('Web', 'Topic')
('', 'Topic')	('Main', 'Topic')
('', '')	('Main', 'WebHome')
('', 'Web/Topic')	('Web', 'Topic')
('', 'Web.Topic')	('Web', 'Topic')
('Web1', 'Web2. Topic')	('Web2', 'Topic')
('Main', 'Topic')	('Main', 'Topic')
('TWiki04', 'Topic')	('TWiki', 'Topic')

where Main and TWiki are the web names set in \$cfg{UsersWebName} and \$cfg{SystemWebName} respectively.

writeWarning(\$text)

Log Warning that may require admin intervention to data/warning.txt

- `$text` - Text to write; timestamp gets added

Return: none

Since: TWiki::Plugins::VERSION 1.020 (16 Feb 2004)

writeDebug(\$text)

Log debug message to data/debug.txt

- `$text` - Text to write; timestamp gets added

Return: none

Since: TWiki::Plugins::VERSION 1.020 (16 Feb 2004)

formatTime(\$time, \$format, \$timezone) -> \$text

Format the time in seconds into the desired time string

- `$time` - Time in epoc seconds
- `$format` - Format type, optional. Default e.g. '31 Dec 2002 - 19:30'. Can be '`$iso`' (e.g. '2002-12-31T19:30Z'), '`$rcs`' (e.g. '2001/12/31 23:59:59', '`$http`' for HTTP header format (e.g. 'Thu, 23 Jul 1998 07:21:56 GMT'), or any string with tokens '`$seconds`', '`$minutes`', '`$hours`', '`$day`', '`$wday`', '`$month`', '`$mo`', '`$year`', '`$ye`', '`$tz`' for seconds, minutes, hours, day of month, day of week, 3 letter month, 2 digit month, 4 digit year, 2 digit year, timezone string, respectively
- `$timezone` - either not defined (uses the displaytime setting), '`gmtime`', or '`servertime`'

Return: `$text` Formatted time string

Note: if you used the removed `formatGmTime`, add a third parameter '`gmtime`'

Since: TWiki::Plugins::VERSION 1.020 (26 Feb 2004)

isValidWikiWord (\$text) -> \$boolean

Check for a valid [WikiWord](#) or [WikiName](#)

- `$text` - Word to test

Since: TWiki::Plugins::VERSION 1.100 (Dec 2005)

extractParameters(\$attr) -> %params

Extract all parameters from a variable string and returns a hash of parameters

- `$attr` - Attribute string

Return: `%params` Hash containing all parameters. The nameless parameter is stored in key `_DEFAULT`

Since: TWiki::Plugins::VERSION 1.025 (26 Aug 2004)

- Example:
 - Variable: `%TEST{ 'nameless' name1="val1" name2="val2" }%`
 - First extract text between `{...}` to get: `'nameless' name1="val1" name2="val2"`
 - Then call this on the text:
- `params = TWiki::Func::extractParameters( $text );=`
 - The `%params` hash contains now:


```
_DEFAULT => 'nameless'
name1    => "val1"
name2    => "val2"
```

extractNameValuePair(\$attr, \$name) -> \$value

Extract a named or unnamed value from a variable parameter string - Note: | Function `TWiki::Func::extractParameters` is more efficient for extracting several parameters

- `$attr` - Attribute string
- `$name` - Name, optional

Return: `$value` Extracted value

Since: `TWiki::Plugins::VERSION 1.000` (7 Dec 2002)

- Example:
 - Variable: `%TEST{ 'nameless' name1="val1" name2="val2" }%`
 - First extract text between `{...}` to get: `'nameless' name1="val1" name2="val2"`
 - Then call this on the text:


```
my $nname = TWiki::Func::extractNameValuePair( $text );
my $val1  = TWiki::Func::extractNameValuePair( $text, "name1" );
my $val2  = TWiki::Func::extractNameValuePair( $text, "name2" );
```

Deprecated functions

From time-to-time, the TWiki developers will add new functions to the interface (either to [TWikiFuncDotPm](#), 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 TWiki release, and probably longer, though this cannot be guaranteed.

Updated plugins may still need to define deprecated handlers for compatibility with old TWiki 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 `TWiki::Plugins` version *in which the handler was first deprecated*. For example, if we need to define the `endRenderingHandler` for compatibility with `TWiki::Plugins` versions before 1.1, we would add this to the plugin:

```
package TWiki::Plugins::SinkPlugin;
use vars qw( %TWikiCompatibility );
$TWikiCompatibility{endRenderingHandler} = 1.1;
```

If the currently-running TWiki version is 1.1 *or later*, then the *handler will not be called* and *the warning will not be issued*. TWiki with versions of `TWiki::Plugins` before 1.1 will still call the handler as required.

The following functions are retained for compatibility only. You should stop using them as soon as possible.

getScriptUrlPath() -> \$path

Get script URL path

DEPRECATED since 1.1 - use `getScriptUrl` instead.

Return: `$path` URL path of TWiki scripts, e.g. `"/cgi-bin"`

WARNING: you are strongly recommended **not** to use this function, as the `{ScriptUrlPaths}` URL rewriting rules will not apply to urls generated using it.

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

getPublicWebList() -> @webs

DEPRECATED since 1.1 - use `getListOfWebs` instead.

Get list of all public webs, e.g. all webs that do not have the NOSEARCHALL flag set in the [WebPreferences](#)

Return: `@webs` List of all public webs, e.g. (`'Main'`, `'Know'`, `'TWiki'`)

Since: TWiki::Plugins::VERSION 1.000 (07 Dec 2002)

formatGmTime(\$time, \$format) -> \$text

DEPRECATED since 1.1 - use `formatTime` instead.

Format the time to GM time

- `$time` - Time in epoc seconds
- `$format` - Format type, optional. Default e.g. `'31 Dec 2002 - 19:30'`, can be `'iso'` (e.g. `'2002-12-31T19:30Z'`), `'rcs'` (e.g. `'2001/12/31 23:59:59'`, `'http'` for HTTP header format (e.g. `'Thu, 23 Jul 1998 07:21:56 GMT'`)

Return: `$text` Formatted time string

Since: TWiki::Plugins::VERSION 1.000 (7 Dec 2002)

getDataDir() -> \$dir

DEPRECATED since 1.1 - use the [content handling functions](#) to manipulate topics instead

Get data directory (topic file root)

Return: `$dir` Data directory, e.g. `"/twiki/data"`

This function violates store encapsulation and is therefore **deprecated**.

Since: TWiki::Plugins::VERSION 1.000 (07 Dec 2002)

getPubDir() -> \$dir

DEPRECATED since 1.1 - use the [content handling functions](#) to manipulate attachments instead

Get pub directory (file attachment root). Attachments are in `$dir/Web/TopicName`

Return: `$dir` Pub directory, e.g. `"/htdocs/twiki/pub"`

This function violates store encapsulation and is therefore **deprecated**.

Use `readAttachment` and `saveAttachment` instead.

Since: TWiki::Plugins::VERSION 1.000 (07 Dec 2002)

checkDependencies(\$moduleName, \$dependenciesRef) -> \$error

DEPRECATED since 1.1 - use [TWiki:Plugins.BuildContrib](#) and define DEPENDENCIES that can be statically evaluated at install time instead. It is a lot more efficient.

Since: TWiki::Plugins::VERSION 1.025 (01 Aug 2004)

TWiki CGI and Command Line Scripts

Programs on the TWiki server performing actions such as rendering, saving and renaming topics.

The TWiki scripts are located in the `twiki/bin` and `twiki/tools` directories. This topic describes the interfaces to some of those scripts. All scripts in the `twiki/bin` directory can be called from the CGI ([Common Gateway Interface](#)) environment or from the command line. The scripts in the `twiki/tools` directory can only be called from the command line.

CGI Scripts

Details on CGI scripts located in the `twiki/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 TWiki user is used (usually `guest`).

Command-line

You **must** be `cd`'d to the `twiki/bin` directory 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 using `'-name'` - for example,

```
$ cd /usr/local/twiki/bin
$ save -topic MyWeb.MyTopic -user admin -action save -text "New text of the topic"
```

All parameters require a value.

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, TWiki will immediately redirect to that URL. Otherwise it overrides the URL and is taken as the topic name (you can pass <code>Web.TopicName</code>)	
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 TWikiSkins)	
cover	Specifies temporary skin path to prepend to the skin path for this script only (see TWikiSkins)	

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.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
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:

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
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 and configuration of the TWiki configuration. None of the parameters to this script are useable for any purpose except `configure`.

edit

The `edit` scipt understands the following parameters, typically supplied by HTML input fields:

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
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.	
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	
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 <code>templatetopic</code> if defined.	
contenttype	Optional parameter that defines the application type to write into the CGI header. Defaults to <code>text/html</code> . May be used to invoke alternative client 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.	

Form field values are passed in parameters named 'field' - for example, if I have a field `Status` the parameter name is `Status`.

- 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 when TWiki login is being used (e.g TemplateLoginManager).

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
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.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
action	One of createweb, deleteUserAccount, editSettings or saveSettings	none

action=createweb

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
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	"

action=deleteUserAccount

Unregisters (removes) the currently logged-in user.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
password	Users' password	none

action=editSettings

No parameters

action=bulkRegister

See [BulkRegistration](#).

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
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=saveSettings

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
text	Text of the topic	"
originalrev	Revision that the edit started on	Most recent revision

All other parameters may be interpreted as form fields, depending on the current form definition in the topic.

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:

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
template	Name of the template file to display	
def	Optional, can be set to the name of a single definition within <code>template</code> . This definition will be instantiated in the <code>template</code> wherever <code>%INstantiate%</code> is seen. This lets you use a single template file for many messages. For an example, see <code>oopsmanagebad.tmpl</code> .	
paramN	Where N is an integer from 1 upwards. These values will be substituted into <code>template</code> for <code>%PARAM1%</code> etc.	

passwd

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
action	one of <code>changePassword</code> or <code>resetPassword</code>	none

Other parameters as described under `manage`, `action=changePassword`.

action=changePassword

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
username	Username	
oldpassword	Existing password (plain text)	
password	New password (plain text)	
passwordA	New password confirmation (plain text)	
TopicName	?	

preview

This script is *deprecated*. Its functions are covered by the `save` script.

rdiff

Renders the differences between version of a TWiki topic

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
------------------	--------------------	----------------

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

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
action	register or verify or resetPassword or approve	

rename

Used for renaming topics.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
skin	skin(s) to use	
newweb	new web name	
newtopic	new topic name	
breaklock		
attachment		
confirm	if defined, requires a second level of confirmation	
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	

resetpasswd

Reset the password for a single or multiple users

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
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 users belonging to the [TWikiAdminGroup](#) 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.

rest

This REST ([Representational State Transfer](#)) script can be invoked via http in a similar way as the view script (see **Invocation Examples**, below) to execute a function that is associated to a "subject" and a "verb" (see below). It'll print the result directly to the stream unless the `endPoint` parameter is specified, in which case the control is redirected to the given topic.

The `rest` script itself uses one parameter:

endPoint	Where to redirect the response once the request is served, in the form "Web.Topic"
-----------------	--

Any additional parameters are passed directly to the function (i.e: The function can get any other parameter using the CGI \$query object)

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 [TWikiPlugins](#), and the `<verb>` is the alias for the function registered using the `registerREStHandler`. The `<subject>` and `<verb>` are then used to lookup and call the registered function.

Functions outside the Plugins also can be registered, but please consider the security implications of allowing URL access, as functions can sidestep TWiki Authentication & Authorisation settings.

`<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 [TWikiGuest](#)).

[Call the Plugin](#)

You can also call the function from the command line, but this will be run as the [TWikiAdminGroup](#) (as it is assumed that shell access is secure) - eg:

```
./rest EmptyPlugin.example
```

Note that for calls to Plugins, they must be enabled in `configure`.

save

The `save` script performs a range of save-related functions, as selected by the `action` parameter.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
<code>action_save=1</code>	default ; save, return to view, <code>dontnotify</code> is OFF	
<code>action_quietsave=1</code>	save, and return to view, <code>dontnotify</code> is ON	
<code>action_checkpoint</code>	save and redirect to the edit script, <code>dontnotify</code> is ON	
<code>action_cancel</code>	exit without save, return to view	
<code>action_preview</code>	preview edited text	
<code>action_addform</code>	Redirect to the "change form" page.	
<code>action_replaceform...</code>	Redirect to the "change form" page.	
<code>action_delRev</code>	Administrators only delete the most recent revision of the topic - all other parameters are ignored. You have to be a member of TWikiAdminGroup to use this, and not all store implementations will support it.	
<code>action_repRev</code>	Administrators only replace the text of the most recent revision of the topic with the text in the <code>text</code> parameter. <code>text</code> must included embedded meta-data tags. All other parameters are ignored. You have to be a member of TWikiAdminGroup to use this, and not all store implementations will support it.	
<code>onlynewtopic</code>	If set, error if topic already exists	
<code>onlywikiname</code>	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	
text	New text of the topic	
forcenewrevision	if set, forces a revision even if TWiki 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	
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.	
originalrev	Revision on which the edit started.	

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,
 - 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,
 - 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,
 - 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**.

search

CGI gateway to the %SEARCH% functionality driven by the following CGI parameters:

<u>Parameter:</u>	<u>Description:</u>	<u>Default:</u>
"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
web="Name" web="Main, Know" web="all"	Comma-separated list of webs to search. See TWikiVariables#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 TWikiForms . 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 TimeInterval .	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	Show topic summary
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, variables & examples	Results in table
expandvariables="on"	Expand variables 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 ";" <i>and</i> 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 tag 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.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
------------------	--------------------	----------------

webs **list** of webs to run stats on none

twiki

Single-script interface to the functionality of all the other scripts. Experimental, not for production use. Read the code if you want to know more.

upload

Uploads an attachment to a topic. The HTTP request is expected to be in `multipart/form-data` format.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
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

You can use a tool like `curl` to upload files from the command line using this script.

view

Used for viewing topics.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
raw=on	Shows the text of the topic in a scrollable textarea	
raw=debug	As <code>raw=on</code> , 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.	
contenttype	Allows you to specify a different Content-Type : (e.g. <code>contenttype=text/plain</code>)	
rev	Revision to view (e.g. <code>rev=45</code>)	
template	Allows you to specify a different skin template, overriding the 'view' template the view script would normally use. The default template is <code>view</code> . For example, you could specify /cgi-bin/view/TWiki04/TWikiScripts?template=edit . This is mainly useful when you have specialised templates for a TWiki Application.	

 For historical reasons, the view script has a special interpretation of the `text` skin. In earlier TWiki versions the `skin=text` parameter was used like this: `http://.../view/MyWeb/MyTopic?skin=text&contenttype=text/plain&raw=on` which shows the topic as plain text; useful for those who want to download plain text for the topic. Using `skin=text` this way is **DEPRECATED**, use `raw=text` instead.

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 [TWikiAccessControls](#). In this case, you can use the `viewfile` script to give access to attachments while still checking access controls.

<u>Parameter</u>	<u>Description</u>	<u>Default</u>
filename	name of attachment	

rev	Revision to view	
-----	------------------	--

Command Line Scripts

Details on command line scripts located in the `twiki/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 TWiki release. Its functions are covered by the standard `wget` and `curl` commands.

- Usage: `geturl <host> <path> [<port> [<header>]]`
- Example: `geturl 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 TWiki 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_twiki.pl

This script executes a number of non-essential regular administration tasks that will help keep your TWiki 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/twiki/bin && perl ../tools/tick_twiki.pl
```

Note: The script has to be run by a user who can write files created by the webserver user.

Related Topics: [AdminDocumentationCategory](#), [DeveloperDocumentationCategory](#)

TWiki Site Tools

Utilities for searching, navigation, and monitoring site activity

TWiki Site Tools include utilities for navigating, searching and keeping up with site activity. Preferences can be configured by web or site-wide. You are currently in the **TWiki04** web. In particular, TWiki provides 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

Each TWiki web has an automatic e-mail alert service that sends a list of recent changes on a preset schedule, like once a day. Users can subscribe and unsubscribe using [WebNotify](#) in each web. The Perl script `mailnotify` is called by a background process at regular intervals. The script sends an automated e-mail to subscribed users if topics were changed in a web since the script was last run.

- You can create a [WebNotify](#) link using [TWikiVariables](#) with `%NOTIFYTOPIC%`

Web Changes Notification Service

Each TWiki 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.

Subscribers are listed in WebNotify following one of these bullet list formats:

three spaces * [*webname* .] *wikiName* - *SMTP mail address*

three spaces * [*webName* .] *wikiName*

three spaces * *SMTP mail address*

three spaces * *SMTP mail address* : *topics*

three spaces * [*webname* .] *wikiName* : *topics*

where *topics* is a space-separated list of topic names.

- Specify topics without a *Web.* prefix
- Topics must exist in this web.
- Topics may be specified using * wildcards
- 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 TWiki "Topic parent" feature.
- Each topic may optionally be preceded by a '+' or '-' sign. The '+' sign means "subscribe to this topic" (the same as not putting anything). The '-' sign means "don't send notifications regarding this topic". This allows users to elect to filter out changes to certain topics (and their children, to an arbitrary depth). Topic filters ('-') take precedence over topic includes ('+').

For example:

```
* daisy@flowers.com
* daisy@flowers.com: Web*
* DaisyCutter: Petal* (1) WeedKillers (3) Red*Phlox
* StarTrekFan: * - *Wars - *sInTheirEyes - *shipTroopers
```

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 of changes to that topic *once*.

If a *TWiki group* is listed for notification, the group will be recursively expanded to the e-mail addresses of all members.

 **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 TWiki 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.

You can also use %MAINWEB% instead of Main, but this is not necessary even if you have renamed the main web by configuring {MainWebName} in [configure](#).

WebSearch - search TWiki site

[WebSearch](#) is an extremely fast and flexible search facility, part of the core TWiki feature set. [WebSearchAdvanced](#) offers more options, including:

- topic title or full-text search
- regular expressions
- search within web or site-wide
- index-style A-Z alphabetical listing sorted topic title
- many more

See also: [SearchHelp](#) for help; [TWikiVariables](#) 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="Twiki04" regex="on" nosearch="on" order="modified"
reverse="on" limit="50" }%
```

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" regex="on" 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 [TWikiVariables](#) with `%STATISTICSTOPIC%`

Configuring for automatic operation

- You can automatically generate usage statistics for all webs. To enable this:
 - Make sure variable `{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 `twiki/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/twiki/bin; ./statistics >/dev/null 2>&1)
```
 - There is a workaround in case you can't run the script as user `nobody`: Run the utility `twiki/bin/geturl` in your cron job and specify the URL of the `twiki/bin/statistics` script as a parameter. Example:

```
0 0 * * * (cd /path/to/twiki/bin; ./geturl mydomain.com /urlpath/to/twiki/bin/
statistics >/dev/null 2>&1)
```

Generating statistics manually by URL

- The `twiki/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:
`/cgi-bin/statistics`
 - Update current month for Main web only:
`/cgi-bin/statistics/Main`
 - Update January 2000 for Main web:
`/cgi-bin/statistics/Main?logdate=200610`

Log Files

TWiki 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: `twiki/logs/log200610.txt`
- Each access gets logged as:
| <time> | <wikiusername> | <action> | <web>.<topic> | <extra info> | <IP address> |
- Example log entry:
| 16 Oct 2006 - 02:44 | [TWikiGuest](#) | view | [WebRss](#) | | 66.124.232.02 |
- Actions are logged if enabled in [configure](#) by the **{Log}{action}** flags
- Logged actions:

<u>Script</u>	<u>Action name</u>	<u>Extra info</u>
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
rename	rename	when moving topic: moved to Newweb.NewTopic
rename	move	when moving attachment: Attachment filename moved to Newweb.NewTopic
passwd	resetpasswd	LoginName , WikiName , E-mail address, success code from addUserPassword
passwd	changepasswd	LoginName , WikiName
save	save	when replacing existing revision: repRev 3 when user checks the minor changes box: dontNotify
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 [TWikiRegistration](#) and for [recent changes alert](#).

TWiki will use the **Net : :SMTP** module if it is installed on your system. Set this with the **SMTPMAILHOST** variable in [TWikiPreferences](#).

The notify e-mail uses the default `changes.tpl` template, or a skin if activated in the [TWikiPreferences](#).

mailnotify also relies on two hidden files in each `twiki/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 **SMTPMAILHOST** in [TWikiPreferences](#) to an empty value.
-  You can set a separate **SMTPSENDERHOST** variable 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 2 * * * (cd /path/to/twiki/bin; ./mailnotify -q)
```

The above line will run mailnotify nightly at 02:00. 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. [TWiki:Codev/CronTabWin](#) is a free scheduler for Windows.

Site Permissions

- [TWikiAccessControl](#) 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 TWiki site

Related Topics: [AdminDocumentationCategory](#), [AdminToolsCategory](#)

Managing Topics

Browser-based rename, move, and delete for individual topics

Overview

You can use browser-based controls to change a topic's name, move it to another TWiki web, or delete it to a hidden Trash web.

How to Rename/Move/Delete a Topic

1. Click on **[More]** (bottom right of page) on the topic to be changed, then, in the new screen, on **[Rename/move]**. You can now rename and/or move/delete in one operation:
 2. **Move/Delete:** Select the target web if other than the current web - choose Trash to [delete a topic](#).
 3. **Rename:** Enter the new topic name - default is current name
-  **NOTE:** You'll be warned if any of the topics to be affected are locked (being edited), or if there is a name conflict.
4. **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, all referring links will be updated).
 5. Click on **[Rename/Move]**: 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/Move]**.
 -  There is a **Put back** feature that allows you to undo a **Rename/Move/Delete** - an instruction line and undo link will appear at the bottom of the modified topic. This allows you to revert from the *last modification only*.

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 Trash - in case of a name conflict with a topic already Trash, the user is alerted and asked to choose a new name.

The Trash web should 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's required for maintenance, it's possible to grant Trash

admin privileges to multiple users, while strictly limiting server access.

Redirecting from an Old Topic

You can use [TWikiMetaData](#) to place a command in the [WebTopicViewTemplate](#) and [WebTopicNonWikiTemplate](#) that will indicate that a topic has been moved by searching for the tag %META:TOPICMOVED{...}%. 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, site-wide. These referring links are by default automatically changed to the new topic and/or web name. This includes relevant [TWikiMetaData](#) definitions.
 - o User can omit one or more topics from the update list by unchecking them.
 - o <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 can't 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 function in various ways. To rename a topic, you need both **ALLOWTOPICCHANGE** and **ALLOWTOPICRENAME** permission for that topic. To alter referring topics, you need change permission. See [TWikiAccessControl](#) 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:

- 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](#).
- 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 TWiki site, the real-world behavior of your user group, and most importantly, the initial TWiki 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 in TWiki 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](#)

Managing Webs

Adding, renaming and deleting webs are all web-based operations.

Overview

A [TWikiSite](#) is divided into webs; each one represents one subject, one area of collaboration. Administrators (in the [TWikiAdminGroup](#)) can add/rename/delete webs.

Choose Web Template

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 like to use as a starting point. Only topics that have names beginning with **Web...** (like "WebHome", "WebNotify", etc.) 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.

Adding a New Web

Create a new web by filling out this form.

 **Note: Keep the number of webs to a minimum!** It is not recommended to create a new web for each little project. You can organize content within a web using categories, [TWikiForms](#) and [FormattedSearch](#). Cross-linking topics and search is easier if there are only a few larger webs.

Name of new web:	The name must start with an upper case letter, followed by upper or lower case letters or numbers. Specify a short name to avoid long URLs.		
Based on web:	Select a TemplateWeb		
Web color:	Enter a StandardColors code for the web		
Description:	Enter a short description of the web. Write <code>Web.TopicName</code> instead of just <code>TopicName</code> if you include links. This will list the web in the SiteMap (leave field empty if you prefer not to update the directory.)		
Use to...	Continue the sentence describing the intended use. This is also for the SiteMap		
Set NOSEARCHALL:	No	Yes	Specify if you want to exclude the web from a "search all webs" search. This will not prevent users accessing the web. It will simply hide it from searches.

Notes:

- Attachments will NOT get copied over along with their topics
- While creating the new web, TWiki will update the following variables in the [WebPreferences](#): WEBBGCOLOR, SITEMAPLIST, SITEMAPWHAT, SITEMAPUSETO and NOSEARCHALL. These variables are used to dynamically generate the [SiteMap](#)
- TWiki does not edit the [TWiki04.TWikiPreferences](#) to update the WIKIWEBLIST. This must be done by hand

Renaming or Deleting a Web

Rename a web via the Tools section in each web's [WebPreferences](#) topic. You may delete a web by moving it into a Trash web.

Permissions

You may only rename a web if you have permissions to rename all the topics within that web, including any topics in that web's subwebs. You will also need permissions to update any topics containing references to that web.

Edit Conflicts

If anyone is editing a topic which requires updating, or which lives in the web being renamed, a second confirmation screen will come up which will indicate which topics are still locked for edit. You may continue to hit the refresh button until an edit lease is obtained for each topic which requires updating (the "Refresh" button will change to "Submit"), or hit "Cancel", which will cancel your edit lease on all affected topics.

Renaming the webs in the distribution

If you plan to rename the Main web, remember that TWiki stores user and group topics in %MAINWEB%, which by default is Main (this is assigned in the site configuration). That means that every [WikiName](#) signature - Main . SomeUserName - points to it and would need updating (unless the variable, %MAINWEB%. SomeUserName, is used throughout). This potentially large change can be performed automatically with the `renameweb` function mentioned above, in the [Main.WebPreferences](#) topic.

If you want to rename the TWiki web, remember it is referred to by %TWIKIWEB% which is also defined by a configuration setting.

Hierarchical Webs

Hierarchical web support is enabled by turning on the {EnableHierarchicalWebs} setting in `configure`. Without this setting, TWiki will only allow a single level of hierarchy (webs). If you set this, you can use multiple levels, like a directory tree, i.e. webs within webs.

 **Note:** You might not need hierarchical webs. TWiki 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.

You can create hierarchical webs via the *Adding a New Web* form above, by using a slash- or dot-separated path name which is based on an existing web name in the *Name of new web:* field.

Example:

To create a subweb named Bar inside a web named Foo, use Foo/Bar or Foo . Bar as the new web name in the form above.

Subweb Preferences are Inherited

The preferences of a subweb are inherited from the parent web and overridden locally. Preferences are ultimately inherited from the [TWiki04.TWikiPreferences](#) topic.

Example Preference Inheritance for Sandbox/TestWeb/SubWeb . SubWebTopic topic:

1. TWiki04.TWikiPreferences site-wide preferences
2. Sandbox.WebPreferences inherits from and overrides settings in TWiki04.TWikiPreferences
3. Sandbox/TestWeb.WebPreferences inherits from and overrides settings in Sandbox.WebPreferences
4. Sandbox/TestWeb/SubWeb.WebPreferences inherits from and overrides settings in Sandbox/TestWeb.WebPreferences
5. Sandbox/TestWeb/SubWeb.SubWebTopic inherits from and overrides settings in Sandbox/TestWeb/SubWeb.WebPreferences

Navigation

The Pattern skin (default) indicates Subwebs by indenting them in the sidebar relative to their level in the hierarchy.

Related Topics: [AdminDocumentationCategory](#), [AdminToolsCategory](#)

Manage Users

Register users on your TWiki site; change/reset/install passwords; remove user accounts

Authentication and Access Control

- [TWikiUserAuthentication](#) describes options of user authentication
- [TWikiAccessControl](#) describes how to define groups and how to restrict access to content

Register User

It is not necessary to have user home pages in the TWiki system for Authentication to work - see [TWikiUserAuthentication](#) for details.

- [TWikiRegistration](#) is for users to fill out a form
- [NewUserTemplate](#) can be changed to customize user home pages, it can optionally use the [UserForm](#) to define user fields as meta data
- [BulkRegistration](#) is for administrators to use to set up one or more accounts: either from a table or from an external file

Change, Reset and Install 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](#) if for administrators who want to reset many passwords at once

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:
2. Remove the FredQuimby - fred line from the Main.TWikiUsers 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.

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 with the organization or has been banished, 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..

Related Topics: [AdminDocumentationCategory](#)

Appendix A: TWiki Development Timeline

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:TWiki.TWikiHistory](#). There were many other contributors; for a full list, visit [TWikiContributor](#).

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
German translation	AndreUlrich
Italian translation	MassimoMancini
Portuguese translation	AntonioTerceiro , CarlinhosCecconi
Spanish translation	WillNorris , MiguelABayona
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 TWiki 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 TWikiForms with FormattedSearch	MartinCleaver
SEARCH enhancements with new parameters <code>excludeweb</code> , <code>newline</code> , <code>noempty</code> , <code>nofinalnewline</code> , <code>nonoise</code> , <code>recurse</code> , <code>zeroresults</code>	Crawford Currie , ArthurClemens , Peter Thoeny , ThomasWeigert
FormattedSearch enhancements with <code>\$changes</code> , <code>\$count</code> , <code>\$formfield</code> (<code>name</code> , <code>30</code> , <code>...</code>), <code>\$summary(expandvar)</code> , <code>\$summary</code> (<code>noheaders</code>), <code>\$summary(showvarnames)</code>	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
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 [TWikiReleaseNotes04x00x00](#)

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](#)
[TWiki: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](#)
[TWiki:Main.
SvenDowideit](#)

Install: The shipped .htaccess.txt now needs to be edited before it is valid, to help reduce chances of error. [Details](#)

[TWiki:Main.
CrawfordCurrie](#)
[TWiki:Main.
SvenDowideit](#)

Install: Configurable password file handling for different types of encryption. [Details](#)

[TWiki:Main.
PavelGoran](#)
[TWiki: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](#)
[TWiki: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](#)

Skins: New pre-installed skins PatternSkin and DragonSkin. [Details](#)

[TWiki: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	TWiki:Main. ArthurClemens TWiki:Main. SvenDowideit
Skins: Added CSS class names to Diff output. Details	TWiki:Main. SvenDowideit
Skins: Templates can now be read from user topics, as well as from files in the templates directcory. Details	TWiki: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	TWiki:Main. ArthurClemens
Rendering: Use exclamation point prefix to escape TWiki markup rendering. Details	TWiki: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	TWiki: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	TWiki:Main. CrawfordCurrie TWiki: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 TWiki:Main. ArthurClemens

Variables: New REVINFO variable in templates supports flexible display of revision information. Details	TWiki:Main. PeterThoeny TWiki:Main. SvenDowideit
Variables: Set times to be displayed as gmtime or servertime. Details	TWiki:Main. SueBlake TWiki: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 TWiki: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	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	TWiki: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 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. MartinClever 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. MartinClever WalterMundt
Plugins: New function TWiki::Func::formatTime to format time into a string. Details	TWiki: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

Plugins: New function <code>Twiki::Func::checkDependencies</code> to check for module dependency. Details	TWiki:Main.CrawfordCurrie TWiki: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 TWiki:Main.SvenDowideit
UI: In attachment table, change 'action' to 'manage'. Details	TWiki:Main.PeterThoeny TWiki:Main.ArthurClemens
UI: Smaller usability enhancements on the file attachment table. Details	TWiki:Main.PeterThoeny TWiki:Main.ArthurClemens
UI: Removes anchor links from header content and places them before the text to fix 'header becomes link'. Details	TWiki:Main.ArthurClemens
UI: Improved functionality of the More screen. Details	TWiki:Main.PeterThoeny TWiki:Main.ArthurClemens
UI: Quick reference chart of most used markup is now listed on the edit screen. Details	TWiki: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	TWiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
UI: Improved warning message on unsaved topic. Details	TWiki:Main.MartinGregory TWiki:Main.SvenDowideit
UI: Reverse order of words in page title for better multi-window/tab navigation. Details	TWiki:Main.ArthurClemens
UI: Provides a framework to create and modify a topic without going through edit->preview->save sequence. Details	TWiki:Main.AndreUlrich TWiki:Main.SvenDowideit
UI: Set the topic parent to none in More screen, e.g. remove the current topic parent. Details	TWiki:Main.PeterThoeny

	TWiki:Main.CrawfordCurrie TWiki:Main.SvenDowideit
UI: Use templates to define how file attachments are displayed. Was previously hard-coded. Details	
UI: Topic diff shows unified diff with unchanged context. Details	TWiki:Main.SvenDowideit
UI: Diff feature shows TWiki form changes in nice tables. Details	TWiki: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	TWiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
Code refactoring: Move functionality out of bin scripts and into included modules. Details	TWiki:Main.CrawfordCurrie TWiki:Main.SvenDowideit
Code refactoring: Move bin script functionality into TWiki::UI modules. Details	TWiki: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	TWiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
Code refactoring: Move savemulti script into TWiki::UI::Save. Details	TWiki:Main.MattWilkie TWiki: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

<u>Bug Fixes of 01-Sep-2004 Release</u>	<u>Developer, Sponsor</u>
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	TWiki:Main.CrawfordCurrie TWiki:Main.PeterThoeny
Fix: Rename fixes unrelated topic references. Details	TWiki:Main.RichardDonkin

[TWiki:Main.
PeterThoeny](#)

[TWiki:Main.
PeterThoeny](#)

[TWiki:Main.
PeterThoeny](#)

[TWiki:Main.
ArthurClemens](#)

[TWiki:Main.
SvenDowideit](#)

[TWiki:Main.
PeterThoeny](#)

[TWiki:Main.
MichaelSparks](#)

[TWiki:Main.
PeterThoeny](#)

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[TWiki:Main.
ThomasWeigert](#)

[TWiki:Main.
SvenDowideit](#)

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SvenDowideit](#)

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JohnTalintyre](#)

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SvenDowideit](#)

[TWiki:Main.
PeterThoeny](#)

[TWiki:Main.
JohnTalintyre](#)

[TWiki:Main.
PeterThoeny](#)

[TWiki:Main.
KimCovil](#)

[TWiki:Main.
PeterThoeny](#)

[TWiki:Main.
MartinGregory](#)

[TWiki:Main.
SvenDowideit](#)

Fix: Bug with infinite recursion in search. [Details](#)

Fix: Can't send mail with full 'From' address. [Details](#)

Fix: All scripts change to \$bin before execute (for mod_perl2). [Details](#)

Fix: Several RSS readers do not show all entries seen in the WebChanges list; repeated updates to the same topics get lost. [Details](#)

Fix: TWiki::Access::checkAccessPermission function improperly handles Main and TWiki webs. [Details](#)

Fix: Topic save returns error CI Date precedes date in revision. [Details](#)

Fix: Double quotes got replaced by " in TWiki forms. [Details](#)

Fix: Duplicated Wiki name in .htpasswd entry for sha1 encoding. [Details](#)

Fix: When viewing a previous version of a topic, the view script substitutes only one occurrence of the variable EDITTOPIC. [Details](#)

Fix: Form default values are not working for text fields. [Details](#)

Fix: Formatted searches using a \$pattern which unbalanced parenthesis crash TWiki. [Details](#)

Fix: Formatted Search uses title but should use name for formfield parameter. [Details](#)

Fix: GMTIME variable returns unwanted GMT text. [Details](#)

Fix: Include from other Web links ACRONYMS. [Details](#)

Fix: Including an HTML file is very slow. [Details](#)

Fix: includeUrl() mess up absolute URLs. [Details](#)

Fix: Filter out fixed font rendering in TOC to avoid unrendered = equal signs in TOC. [Details](#)

Fix: The initializeUserHandler is broken for session Plugins. [Details](#)

Fix: SEARCH fails with very large webs. [Details](#)

Fix: Security alert: User could gain view access rights of another user. [Details](#)

Fix: 'print to closed file handle' error of log files are not writable. [Details](#)

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 TWiki: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 TWiki:Main. SvenDowideit
Fix: Software error in SEARCH if regular expression pattern has unmatched parenthesis. Details	TWiki:Main. PeterThoeny
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	TWiki: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	TWiki: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	TWiki: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	TWiki: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	TWiki: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	TWiki:Main.CrawfordCurrie TWiki:Main.SvenDowideit
Fix: Image size of PNG files. Details	TWiki: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	TWiki: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	TWiki:Main.SvenDowideit
Fix: Resolving variables in included topics. Details	TWiki:Main.OliverKrueger TWiki: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 [TWikiPreferences](#) to disable the auto-linking of [WikiWords](#)
- **29 Dec 2002** - [TWiki:Main.AndreaSterbini](#), [TWiki:Main.PeterThoeny](#), [TWiki:Main.RichardDonkin](#), [TWiki: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 `$logDir` introduced in `TWiki.cfg` to set the log directory
- **13 Sep 2002** - [TWiki:Main.PeterThoeny](#)
 - Renamed the **Test** web to **Sandbox**
- **03 Aug 2002** - [TWiki:Main.RichardDonkin](#)
 - New `setLib.cfg` file in the bin directory to set the TWiki library path
- **02 Aug 2002** - [TWiki:Main.PeterThoeny](#), [TWiki:Main.RyanFreebern](#)
 - Support for outbound HTTP proxy when including URLs based on new `%PROXYHOST` and `%PROXYPORT%` settings in the [TWikiPreferences](#)
- **12 Jul 2002** - [TWiki:Main.PeterThoeny](#)
 - The page logo is configurable with new `%WIKILOGOIMG%`, `%TWIKILOGOURL%` and `%WIKILOGOALT%` variables in [TWikiPreferences](#); replacing `$wikiHomeUrl` in `TWiki.cfg`
- **12 Jun 2002** - [TWiki:Main.PeterThoeny](#)
 - New `%WIKITOOLNAME%` variable in [TWikiPreferences](#); replacing `$wikiToolName` in `TWiki.cfg`
- **31 May 2002** - [TWiki:Main.PeterThoeny](#)
 - New `%EDITBOXSTYLE%` preferences variable 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.tmp` 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.tpl`, `notext.tpl` and `notwiki.tpl` 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 [TWikiAdminGroup](#) (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://Twiki.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 [TWikiAccessControl](#) 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 grained control who is allowed to change or create topics. More in [TWikiAccessControl](#) 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{"%TWIKIWEB%.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](#) variables `%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 variable %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 variables %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 [TWikiUsers](#)). 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 monthly statistics with number of topic views and changes, most popular topics, and top contributors. (It needs to be enabled, [TWikiDocumentation](#) 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@somewherePLEASENOSPAM.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 TWikiHistory . { [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 TWiki).
- **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 shown 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. [TWikiDocumentation](#) 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](#)
 - Referred-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 [WikiTopic](#) 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/notwiki.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 [TWikiUsers](#).
- **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
- [TWikiDocumentation](#): reference manual for the latest TWiki

Related Topics: [DeveloperDocumentationCategory](#)

Appendix B: Encode URLs With UTF8

Use internationalised characters within WikiWords and attachment names

This topic addresses implemented UTF-8 support for URLs only. The overall plan for UTF-8 support for TWiki is described in [TWiki:Codev.ProposedUTF8SupportForI18N](#).

Current Status

To simplify use of internationalised characters within [WikiWords](#) and attachment names, TWiki now 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 TWiki, 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 TWiki 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 [TWikiSystemRequirements](#), 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 TWiki 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 - see [TWiki:Codev.ProposedUTF8SupportForI18N](#).

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').

This feature should also support use of Mozilla Browser with [TWiki:Codev.TWikiOnMainframe](#) (as long as mainframe web server can convert or pass through UTF-8 URLs) - however, this specific combination is not tested. Other browser-server combinations should not have any problems.

Please note that use of UTF-8 as the site character set is not yet supported - see Phase 2 of [TWiki:Codev.ProposedUTF8SupportForI18N](#) for plans and work to date in this area.

This feature is complete in TWiki releases newer than February 2004.

Note for skin developers: is no longer required ([TWiki:Plugins.InternationalisingYourSkin](#)).

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>

The overall plan for UTF-8 support for TWiki is described in two phases in [TWiki:/Codev.ProposedUTF8SupportForI18N](#) - this page addresses the first phase, in which UTF-8 is supported for URLs only.

UTF-8 URL translation to virtually any character set is supported as of TWiki Release 01 Sep 2004, but full UTF-8 support (e.g. pages in UTF-8) is not supported yet - this will be phase 2.

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 [TWiki:Codev.MajorSecurityProblemWithIncludeFileProcessing](#) (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 TWiki with international characters in [WikiWords](#) without changing your browser setup from the default, and you can also still use TWiki using non-UTF-8 URLs. This works on any Perl version from 5.005_03 onwards and corresponds to Phase 1 of [TWiki:Codev.ProposedUTF8SupportForI18N](#). 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.

TWiki 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 TWiki being involved, TWiki's code can't do its UTF-8 decoding trick, so TWiki 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.

[TWiki:Codev.TWikiOnMainframe](#) uses EBCDIC web servers that typically translate their output to ASCII, UTF-8 or ISO-8859-1 (and URLs in the other direction) since there are so few EBCDIC web browsers. Such web servers don't work with even ISO-8859-1 URLs if they are URL encoded, since the automated translation is bypassed for URL-encoded characters. For TWiki on Mainframe, TWiki assumes that the web server will automatically translate UTF-8 URLs into EBCDIC URLs, as long as URL encoding is turned off in TWiki pages.

Testing and Limitation

It should work with [TWiki:Codev.TWikiOnMainframe](#). Tested with IE 5.5, Opera 7.11 and Mozilla (Firebird 0.7).

Opera Browser on the P800 smartphone is working for page viewing but leads to corrupt page names when editing pages.

For up to date information see [TWiki:Codev.EncodeURLsWithUTF8](#)

Appendix C: TWiki CSS

Listing of CSS class names emitted from TWiki core code and standard plugins, for the Dakar release.

Who should read this document?

Most html elements generated by TWiki core code now have Cascading Style Sheet (CSS) tags. ***Skin builders*** and others who want to

change the appearance of the default TWiki 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 TWiki class names have the prefix `twiki`. So: `twikiAlert`, `twikiToc`, etcetera. Remember that CSS class names are case sensitive - TWiki CSS uses lowercase `tw`.
- 2. TWiki uses class names only (`.twikiDiffTable`) and no id names (`#twikiDiffTable`), to allow multiple class names. Class names are written using the dot prefix.
- 3. If you define your own CSS classes, it is preferable that you do not use the `twiki` prefix to prevent undesired overriding effects.

A wide range of standard styles are used in the TWiki core code and topics, and more are used in plugins. The following is an exhaustive list of all styles defined by the Pattern skin. 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!)

TWiki styles in core code

.twikiAlert	Client.pm, Form.pm, Statistics. pm
.twikiFirstCol	Render.pm
.twikiForm	Render.pm
.twikiNew	Changes.pm, Search.pm
.twikiHelp	Changes.pm
.twikiTopRow	Manage.pm
.twikiSummary	Manage.pm
.twikiGrayText	Manage.pm
.twikiCheckBox	Manage.pm
.twikiLink	Render.pm
.twikiNewLink	Render.pm
.twikiAnchorLink	Render.pm
.twikiEmulatedLink	Preview.pm
.twikiWebIndent	TWiki.pm

.twikiEditFormTextField	Form. pm
.twikiEditFormLabelField	Form. pm
.twikiEditFormTextAreaField	Form. pm
.twikiEditFormCheckboxButton	Form. pm
.twikiEditFormCheckboxField	Form. pm
.twikiRadioButton	Form. pm
.twikiEditFormRadioField	Form. pm
.twikiEditFormError	Form. pm

.twikiDiffTable	RDiff. pm
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.twikiDiffDeletedHeader	RDiff. pm
.twikiDiffDeletedMarker	RDiff. pm
.twikiDiffDeletedText	RDiff. pm
.twikiDiffAddedHeader	RDiff. pm
.twikiDiffAddedMarker	RDiff. pm
.twikiDiffAddedText	RDiff. pm
.twikiDiffChangedHeader	RDiff. pm
.twikiDiffChangedText	RDiff. pm
.twikiDiffUnchangedText	RDiff. pm
.twikiDiffUnchangedTextContents	RDiff. pm
.twikiDiffLineNumberHeader	RDiff. pm

.twikiToc	TWiki. pm
.twikiTocTitle	TWiki. pm

TWiki Styles in Plugins

.twikiTable	TablePlugin
.twikiSortedAscendingCol	TablePlugin
.twikiSortedDescendingCol	TablePlugin
.twikiFirstCol	TablePlugin

TWiki Styles in Templates

.twikiFormTable	formtables.tmpl, form.tmpl
.twikiFormTableHRow	formtables.tmpl, form.tmpl
.twikiFormTableRow	formtables.tmpl
.twikiAttachments	attachtables.tmpl
.twikiEditForm	form.tmpl
.twikiSubmit	
.twikiButton	
.twikiLeft	
.twikiRight	
.twikiClear	
.twikiHidden	
.twikiSmall	
.twikiBottomRow	
.twikiSRAuthor	
.twikiSRRev	

.twikiPageForm	
.twikiSeparator	
.twikiAccessKey	
.twikiLinkLabel	
.twikiFormSteps	container around a form, such as the attach form: attach.tmpl
.twikiFormStep	form row

TWiki Styles in topics

.	TWikiPreferences
twikiBroadcastMessage	

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: [TWikiSkins](#), [PatternSkin](#), [DeveloperDocumentationCategory](#), [AdminDocumentationCategory](#)

This topic: TWiki04 > [TWikiDocumentation](#)

History: r47 - 27 Mar 2005 - 13:14:15 - [TWikiContributor](#)

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