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Variable Cache Plugin

Cache TWiki variables in selected topics for faster page rendering

Overview

This Plugin caches TWiki variables in selected topics for faster page rendering.

Most topics in a typical TWiki installation are rendered within a small deviation in terms of speed. Exceptions are topics that contain a lot of dynamic content. This is mainly caused by CPU or I/O intensive TWikiVariables, such as `%SEARCH{ }%` and `%INCLUDE{ }%`.

This Plugin caches all `%VARIABLES%` located in a topic so that the topic can get rendered as quickly as one without variables. An outdated cache gets refreshed when a user is looking at a topic; in which case it will take longer to render the page. Time-based refresh can also be disabled in favor of an on-demand cache update. The cache of affected topics can be invalidated based on parent relationship, backlinks and topic includes.

The rendering of TWiki markup to HTML is not cached. That is, user specific HTML rendering based on skin settings is not affected by the caching.

Syntax Rules and Cache Update Rules

- Add a `%VARCACHE{ }%` variable to the topic you want to cache
 - ◆ It supports these parameters:

Parameter	Description	Default
"..." or <code>refresh="..."</code>	Cache refresh period in hours, e.g. maximum age of cache	REFRESH Plugin setting
<code>cachemsg="..."</code>	Message shown when looking at a cached topic <i>Note:</i> Use <code>\$age</code> to indicate the age of cache, <code>\$link</code> to indicate the refresh URL	CACHEMSG Plugin setting
<code>updatemsg="..."</code>	Message shown after a cache refresh <i>Note:</i> Use <code>\$link</code> to indicate the refresh URL	UPDATEMSG Plugin setting

- The `%VARCACHE{ }%` variable gets:
 - ◆ replaced with the `cachemsg` message when looking at a cached topic
 - ◆ replaced with the `updatemsg` message if the cache has just been updated
 - ◆ removed if caching is not active, e.g. when the topic gets rendered dynamically
- The cache gets updated on topic view if:
 - ◆ the cache does not exist (e.g. after adding the `%VARCACHE{ }%` variable)
 - ◆ the cache is older than the cache refresh period (unless refresh if set to 0)
 - ◆ the cache is older than the topic (e.g. the topic has been updated)
 - ◆ the topic is accessed with a `?varcache=refresh` URL parameter (usually by following the [refresh](#) link in the cache message)
- The topic is rendered dynamically without caching when:
 - ◆ the topic has URL parameters other than `varcache` and `topic` (e.g. to show dynamic content properly, such as table sorting, filtering, searching)
 - ◆ the topic is previewed after editing
- Exclude variables from getting cached:
 - ◆ Prefix any variable with `VARCACHE_EXCLUDE_` and it will be excluded from caching. For example, to exclude `%WIKIUSERNAME%` write `%VARCACHE_EXCLUDE_WIKIUSERNAME%`. Make sure to escape all variables that depend on an escaped variable. For example, escape a `FORMFIELD` variable if it encloses an escaped `WIKIUSERNAME`:

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```
%VARCACHE{"24"}%
%VARCACHE_EXCLUDE_FORMFIELD{ "FirstName"
topic="%VARCACHE_EXCLUDE_WIKIUSERNAME%" }%
```

- ◆ Or, use `<varcache_exclude> ... </varcache_exclude>` to exclude sections of a page from caching. Example:

```
%VARCACHE{"24"}%
Cached: %SEARCH{ "." nonoise="on" format="$topic" separator=", " limit="10"
}%
<varcache_exclude>
Not cached: %SEARCH{ "%WIKINAME%" nonoise="on" format="$topic" separator=",
" limit="10" }%
</varcache_exclude>
Cached: %WEBLIST{}%
```

Plugin Settings

This plugin can be configured with preferences settings in Main.TWikiPreferences (site level), a WebPreferences (web level) or in a topic (page level). Do not change the settings here, they are here only to illustrate the default values. To overload, copy the settings to one of the aforementioned topics. On a large site having many webs, it's recommended to set `VARCACHEPLUGIN_INVALIDATEONUPDATE` `none` at the site level to prevent save slowness from happening unknowingly. The current site level setting is `none`.

- Debug plugin: (See output in `data/debug.txt`)
 - ◆ Set `VARCACHEPLUGIN_DEBUG = 0`
- Default refresh period in hours. No automatic refresh: 0, default: 24
 - ◆ Set `VARCACHEPLUGIN_REFRESH = 24`
- On topic creation and topic update, invalidate cache of affected topics: `parent` (its parent topic), `parent (32)` (its parent topics on parent path up to 32 levels), `backlinks` (its backlink topics in current web), `include` (its including topics in current web), `none` (no invalidation), or a comma-list thereof.

Note: Invalidating affected topics can slow down topic save in very large webs; it is recommended to set this to `none` for webs that have 10K+ topics.

 - ◆ Set `VARCACHEPLUGIN_INVALIDATEONCREATE = parent`
 - ◆ Set `VARCACHEPLUGIN_INVALIDATEONUPDATE = include, parent`
- Cache help messages. Use `$age` to indicate age of cache, `$link` to indicate the refresh URL:
 - ◆ Set `VARCACHEPLUGIN_CACHMSG = This topic was cached $age ago ([[$link]][refresh]])`
 - ◆ Set `VARCACHEPLUGIN_UPDATERMSG = This topic is now cached ([[$link]][refresh]])`
 - ◆ #Set `VARCACHEPLUGIN_CACHMSG = 📄`
 - ◆ #Set `VARCACHEPLUGIN_UPDATERMSG = 📄`

Limitations

- *Users:* The cache is not user specific. For example, all users see the expanded `%WIKIUSERNAME%` of the person who refreshed the cache (on demand or by looking at a topic with an expired cache) unless the variable is specifically excluded from caching.
 - ◆ To exclude a user specific variable such as `%WIKIUSERNAME%` write `%VARCACHE_EXCLUDE_WIKIUSERNAME%`.
 - ◆ The `<varcache_exclude> ... </varcache_exclude>` tags can't be used in included topics; use the `VARCACHE_EXCLUDE_` variable prefix in included topics.

- **Cache invalidation:** Invalidating affected topic caches can slow down topic saves in very large webs.
 - ◆ Set `VARCACHEPLUGIN_INVALIDATEONUPDATE` to `none` for webs that have 10K+ topics.

Plugin Installation Instructions

Note: You do not need to install anything on the browser to use this plugin. The following instructions are for the administrator who installs the plugin on the TWiki server.

Show details Hide details

- For an *automated installation*, run the configure script and follow "Find More Extensions" in the in the *Extensions* section.
- Or, follow these *manual installation* steps:
 - ◆ Download the ZIP file from the Plugins home (see below).
 - ◆ Unzip `VarCachePlugin.zip` in your twiki installation directory. Content:

File:	Description:
<code>data/TWiki/VarCachePlugin.txt</code>	Plugin topic
<code>data/TWiki/VarCachePluginTest.txt</code>	Plugin test topic
<code>data/TWiki/VarVARCHACHE.txt</code>	Variable documentation topic
<code>lib/TWiki/Plugins/VarCachePlugin.pm</code>	Plugin Perl module
<code>pub/TWiki/VarCachePlugin/cachetopic.gif</code>	Cache icon 16x16
 - ◆ Set the ownership of the extracted directories and files to the webserver user.
 - ◆ Make sure the dependencies listed in the table below are resolved. None
- Plugin *configuration and testing*:
 - ◆ Run the configure script, enable the plugin in the *Plugins* section
 - ◆ Configure the plugin: See plugin settings above.
 - ◆ Test if the installation was successful:
 - ◇ Visit the `VarCachePluginTest` topic, it contains a nested search.
 - ◇ Click on the [refresh](#) link or append a `?varcache=refresh` parameter to the URL.

Plugin Info

- One line description, is shown in the `TextFormattingRules` topic:
 - ◆ Set `SHORTDESCRIPTION` = Cache TWiki variables in selected topics for faster page rendering

Plugin Author:	TWiki:Main.PeterThoeny ↗
Copyright:	© 2013-2015 Wave Systems Corp. © 2004-2018 Peter Thoeny, TWiki.org ↗ © 2008-2018 TWiki:TWiki.TWikiContributor ↗
Sponsor:	Wave Systems Corp. ↗ for <code>VARCACHE_EXCLUDE_</code> variable prefix and cache invalidation logic
License:	GPL (GNU General Public License ↗)
Plugin Version:	2018-07-08

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2018-07-08:	TWikibug:Item7841 ↗ : Copyright update to 2018
2016-12-14:	TWikibug:Item7764 ↗ : May cause an error on a subweb
2016-01-14:	TWikibug:Item7708 ↗ : Copyright update to 2016
2015-03-16:	TWikibug:Item7625 ↗ : Invalidate parent topics on parent path up to indicated level
2015-01-09:	

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	TWikibug:Item7568: Document limitation of slow topic saves in very large webs; remove VARCACHE if found in an INCLUDE
2014-02-22:	TWikibug:Item7438: Add cache invalidation logic for parents, backlinks and includes
2013-12-29:	TWikibug:Item7396: Doc update on limitation of variable excludes
2013-12-09:	TWikibug:Item7396: Cache topic also if topic parameter is used
2013-12-04:	TWikibug:Item7396: VARCACHE_EXCLUDE_ variable prefix to disable caching of selected variables
2012-11-14:	TWikibug:Item7020: Categorize TWiki Variable VARCACHE
2012-09-07:	TWikibug:Item6837: Doc fixes
2012-04-27:	TWikibug:Item6871: New <varcache_exclude> tag to exclude parts of page from getting cached
2011-05-25:	TWikibug:Item6701: Small code refactor; adding \$SHORTDESCRIPTION that was missing in previous release
2011-05-24:	TWikibug:Item6730: Move cache data from pub directory to working directory; Use proper umask for directories created; Fix to make it better run under mod_perl; Support abbreviated %VARIABLE% syntax; Possible to specify a refresh of 0 (meaning infinite) -- TWiki:Main.TimotheLitt
2011-05-01:	TWikibug:Item6701: Doc improvements
2010-04-25:	TWikibug:Item6433: Doc fix: Changing TWIKIWEB to SYSTEMWEB
2010-04-06:	TWikibug:Item5414: Support for plugins that dynamically add JavaScript and CSS using TWiki::Func::addToHEAD(); added VarVARIABLE variable documentation topic; support nameless parameter for refresh time; fixed typo in UPDATEMSG plugin setting name
2006-01-06:	Small fix for TWiki 4.0
2004-07-16:	Doc improvements (no code change)
2004-07-15:	Initial version
TWiki Dependency:	\$TWiki::Plugins::VERSION 1.1 (TWiki 4.0, 2006-02-01)
CPAN Dependencies:	none
Other Dependencies:	none
Perl Version:	5.008
Benchmarks:	GoodStyle 99%, FormattedSearch 99%, VarCachePluginTest 208%
Plugin Home:	http://TWiki.org/cgi-bin/view/Plugins/VarCachePlugin
Feedback:	http://TWiki.org/cgi-bin/view/Plugins/VarCachePluginDev
Appraisal:	http://TWiki.org/cgi-bin/view/Plugins/VarCachePluginAppraisal

Related Topics: VarVARIABLE, VarCachePluginTest, TWikiPlugins, DeveloperDocumentationCategory, AdminDocumentationCategory, TWikiPreferences

This topic: TWiki > VarCachePlugin

Topic revision: r1 - 2018-07-08 - TWikiContributor



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Note: Please contribute updates to this topic on TWiki.org at TWiki:TWiki.VarCachePlugin