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| --- | --- |
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| **Enversion Administration Guide** |  |
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Issue Record

The amendments made between approved issues of this document are captured below:

|  |  |  |  |
| --- | --- | --- | --- |
| Tag | Date | Amendments | Author |
| v0.2.15 | 16-Feb-2015 | Initial revision. | Trent Nelson |
| v0.2.16 | 10-Mar-2015 | Updated to v0.2.16. | Trent Nelson |
| v0.2.19+ | 06-May-2015 | Added notes on v0.2.17, v0.2.18 and v0.2.19. Begin work on documentation for v0.2.20 (root hints). | Trent Nelson |

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Executive Summary

Enversion is a server-side hook framework for Subversion that blocks over 80 different types of unwanted or problematic commits. It is ideal in enterprise environments where tight controls must be kept on source code control.

The framework is written in Python, and is compatible with Python 2.6 and 2.7. It runs on Linux and OS X.

It is licensed under the same terms as the Apache Subversion project (Apache 2.0).

The project’s source code and issue tracker is hosted on github.com:

<http://github.com/enversion/enversion>

Releases are made available via git tags, signed by “Trent Nelson <trent@trent.me>" with GPG public key DDCBBC36, which is available from the MIT public key server:

<https://pgp.mit.edu/pks/lookup?op=get&search=0x25D93491DDCBBC36>

# What’s New

This section contains new features and enhancements in reverse chronological order (i.e. newest features are listed first).

## v0.2.20 [IN DEVELOPMENT]

### Root Hints Support

This release adds initial support for root hints.

## v0.2.19

### Fix Python 2.6 Compatibility

This release fixes some general compatibility issues with Python 2.6.

## v0.2.18

### Fix Root Handling Bug

This release fixes a critical bug with regards to root handling. Related github issues:

<https://github.com/enversion/enversion/issues/24>

<https://github.com/enversion/enversion/issues/35>

The underlying issue presented itself in the following situation: a known root was being copied to another known root’s subtree. For example, presuming trunk and /branches/1.0.x are known roots (i.e. they have evn:roots entries):

A /branches/1.0.x/trunk (from /trunk:926)

The erroneous code path was not treating copies different from renames. If this commit were a rename (e.g. /trunk was also deleted in the same commit), then the root entry for /trunk would be removed from that commit’s revision property. That logic was also being applied for commits that were simply copying roots, too.

### Implement Show Rev Prop Command

This is a helper command that conveniently prints all revision properties for a given revision in JSON format. See section *2.5.1 evnadmin show-rev-prop* for more information.

## v0.2.17

### Initial PyPI Support

This release only contained minor (non-functional) changes to the source code (setup.py) required in order to upload Enversion to PyPI.

## v0.2.16

### Configurable Exclusion of Blocking Large Files

Support for blocking commits for files that were over a configurable maximum file size (default 25MB) was added in v0.2.7. This logic was enhanced in two ways in v0.2.16:

1. The ability to exclude files matching a configurable regex from the max size checks was added (see max-file-size-exclusion-regex configuration property). A command was also added to easily test that the regex was matching expected paths after being altered without having to commit files: evnadmin verify-path-matches-max-file-size-exclusion-regex.
2. The original logic was extended such that file sizes are checked in all applicable circumstances – not just when the file is first committed. This prevents the file size limits from being circumvented by committing a file under the limit, then altering it such that it is over the limit.

### Update File Extension Blocking Logic to Cover Renames and Replaces

The *Blocked File Extensions* introduced in v0.2.15 has been updated to cover renames and replaces. Prior to this change, a path was only verified that it didn’t match the list of blocked file extensions when it was first added to the repository. The file could then be subsequently renamed to a path that had a blocked file extension without being blocked by Enversion. This change fixes that so files can’t be renamed to a blocked file extension.

Additionally, a new command was added to allow an administrator to verify that the regular expression is matching expected paths after being changed without having to commit the files: evnadmin verify-path-matches-blocked-file-extensions-regex.

|  |  |
| --- | --- |
| Since | 0.2.16 |
| Config | blocked-file-extensions-iregex |
| Issue | <https://github.com/enversion/enversion/issues/30> |
| Initial  Commit | <https://github.com/enversion/enversion/commit/b827e484c691d996aae06ba9d6564539464672c4> |
| Tests | <https://github.com/enversion/enversion/blob/b827e484c691d996aae06ba9d6564539464672c4/lib/evn/test/test_blocked_file_extensions.py#L86> |

Table 2 What’s New: Update Blocked File Extension Logic to Cover Renames and Replaces

## v0.2.15

### Blocked File Extensions

This change adds support for blocking a commit if it contains a path matching a given regular expression.

|  |  |
| --- | --- |
| Since | 0.2.15 |
| Config | blocked-file-extensions-regex |
| Issue | <https://github.com/enversion/enversion/issues/28> |
| Initial  Commit | <https://github.com/enversion/enversion/commit/d36734a3af05cf77a07ccfaff1d87c7a436ca189> |
| Tests | <https://github.com/enversion/enversion/blob/master/lib/evn/test/test_blocked_file_extensions.py> |

Table 3 What’s New: Blocked File Extensions

### Add Unit Tests for Blocking Large Files

Support was added for blocking large files from being committed to the repository in v0.2.7. This change was made prior to the unit test enhancements, so it didn’t feature any unit tests. Unit tests were added in v0.2.15.

|  |  |
| --- | --- |
| Since | 0.2.15 |
| Config | max-file-size-in-bytes |
| Issue | <https://github.com/enversion/enversion/issues/27> |
| Initial  Commit | <https://github.com/enversion/enversion/commit/d70dc7d4b6cdaff118215ac899e39570677f4d47> |
| Tests | <https://github.com/enversion/enversion/blob/d70dc7d4b6cdaff118215ac899e39570677f4d47/lib/evn/test/test_file_size_limits.py> |

Table 4 What's New: Unit Tests Verifying Blocking Large Files Logic

## v0.2.14

### Custom Hooks

Support for custom hooks was introduced in v0.2.14. A custom hook in this context is a Python class that derives from [evn.custom\_hook.CustomHook](https://github.com/enversion/enversion/blob/master/lib/evn/custom_hook.py#L4) and implements either pre\_commit or post\_commit (or both), e.g.:

class OurCustomHook(evn.custom\_hook.CustomHook):

def pre\_commit(self, commit, \*args, \*\*kwds):

...

def post\_commit(self, commit, \*args, \*\*kwds):

...

Figure 1 Example Custom Hook

Enversion will automatically invoke the custom hook class after it has done its processing of the changeset. This allows custom hook logic to leverage things like how the commit was classified (i.e. was a tag created, was a branch modified).

|  |  |
| --- | --- |
| Since | 0.2.14 |
| Config | custom-hook-classname |
| Issue | <https://github.com/enversion/enversion/issues/7> |
| Initial  Commit | <https://github.com/enversion/enversion/commit/fa53601b94205ec1c0df4fbabf61970490c4a591> |
| Tests | <https://github.com/enversion/enversion/blob/v0.2.14/lib/evn/test/test_custom_hooks.py> |

Table 5 What's New: Custom Hooks

# Command Reference

Enversion is interacted with via the CLI program evnadmin. This program has been modelled after the Subversion CLI program svnadmin, and thus, shares a similar interface and command line parameters where possible.

When run with no arguments, it will print out the available subcommands, e.g.:

% evnadmin

Type 'evnadmin help <subcommand>' for help on a specific subcommand.

Available subcommands:

analyze

create

debug

disable

disable-remote-debug (drd)

doctest

dump-config (dc)

dump-default-config (ddc)

dump-hook-code (dhc)

dump-modified-repo-config (dmrc)

dump-repo-config (drc)

enable

enable-remote-debug (erd)

find-merges (fm)

fix-hooks (fh)

get-repo-component-depth (grcd)

get-repo-custom-hook-class (grchc)

list-unit-test-classnames (lutc)

purge-evn-props (pep)

root-info (ri)

run-hook (rh)

selftest

set-repo-component-depth (srcd)

set-repo-custom-hook-class (srchc)

show-actual-config-file-load-order (sacflo)

show-actual-repo-config-file-load-order (sarcflo)

show-debug-sessions (sds)

show-possible-config-file-load-order (spcflo)

show-possible-repo-config-file-load-order (sprcflo)

status

show-repo-hook-status (srhs)

show-roots (sr)

show-writable-repo-override-config-filename (swrocf)

toggle-remote-debug (trd)

unittest

version

Figure 2 Sample Output: evnadmin

The commands can be invoked via the shorter abbreviations listed in parenthesis.

## Administration Commands

The most commonly used commands for day-to-day administration of Enversion are listed in this section.

### evnadmin create

Creates a new Subversion repository with Enversion enabled, and (optionally) prime the initial repository layout (using svnmucc).

### evnadmin analyze

Before Enversion can be enabled against an existing repository, the repository must be analyzed using this command. This will process every revision of the repository and construct the necessary roots in order for automatic root detection to be done once the hooks are enabled.

### evnadmin enable

Enables Subversion against an existing repository. This will analyse the repository first if necessary. Enabling Enversion means that the pre and post-commit hooks become active, such that invalid commits will be blocked at the pre-commit stage, and root-mutating commits will alter the evn:roots revision properties at the post-commit stage.

### evnadmin disable

Disable Enversion for the given repository. This alters the hooks such that Enversion is no longer invoked during pre and post-commit. This would typically be called only in extra-ordinary circumstances where Enversion is failing or raising unexpected exceptions and normal, valid commits aren’t being let through.

Once Enversion is enabled against a repository, it should not be disabled as long as commits can be made. Disabling Enversion will mean that root validation will not take place, nor will evn:roots revision properties be maintained until Enversion is re-enabled (and analysis is run against the revisions that were committed whilst it was disabled).

### evnadmin status

This is an alias for `evnadmin show-repo-hook-status`, and provides a means to quickly display whether or not Enversion has been enabled for a given repository.

## Customization Commands

This section describes the commands that you would run against an existing Enversion-enabled Subversion repository in order to customize the behaviour of major features.

### evnadmin set-repo-component-depth

This changes the component depth of a repository between single and multi (or disables it completely). See section *3 Repository Layout: Single vs Multiple Component* for more information on repository depth/layout.

### evnadmin get-repo-component-depth

Display the current component depth of a repository (single, multi or disabled).

### evnadmin set-repo-custom-hook-class

This command changes a repository’s custom hook class. It validates that the class can be loaded and is a subclass of evn.custom\_hook.CustomHook, then writes the custom-hook-class configuration file property to the writable configuration file for the repository. This is the recommended way to alter a repository’s custom hook class.

### evnadmin get-repo-custom-hook-class

Displays the current custom hook class for a given repository.

### evnadmin verify-path-matches-blocked-file-extensions-regex

This command is used to verify that a given path matches the blocked-file-extensions-regex configuration value for a given repository. It should be used to test that a given path is properly matched by the regex whenever making changes to it.

(This is a helper command that has been added for convenience. The only way to test the regex is correctly matching what you expect, without this command, is to manually try commit files to the repository.)

### evnadmin verify-path-matches-max-file-size-exclusion-regex

This is a helper command similar to the one above that allows an administrator to verify that a given path is matched by the max-file-size-exclusion-regex configuration property. It should be used to verify that a given path is properly matched by a regex whenever making changes to said configuration property.

## Configuration Commands

These commands interact with the configuration files used by Enversion.

### evnadmin dump-config

### evnadmin dump-default-config

### evnadmin dump-modified-repo-config

### evnadmin dump-repo-config

### evnadmin show-possible-config-file-load-order

### evnadmin show-possible-repo-config-file-load-order

### evnadmin show-actual-config-file-load-order

### evnadmin show-actual-repo-config-file-load-order

### evnadmin show-writable-repo-override-config-filename

## Root Management Commands

### evnadmin show-roots

## Miscellaneous Commands

### evnadmin show-rev-prop

This command provides a convenient way to display all the revision properties for a given revision. The output will be in JSON format. For example:

bash-4.1$ evnadmin show-rev-props -r1415 ACME

Showing revision properties for repository 'ACME' at r1415:

{'evn': {'errors': {'/branches/ACME-1.0.X/': ['known root subtree path copied to valid root path']},

         'roots': {'/trunk/': {'created': 1}}},

'svn': {'author': 'trent',

         'date': '2015-02-12T08:17:25.678052Z',

         'log': 'Create branch ACME-1.0.X'}}

Table 6 Example output from evnadmin show-rev-props

The equivalent command using svn would be:

-bash-4.1$ svn proplist -v --revprop -r1415 file://`pwd`/ACME

Unversioned properties on revision 1415:

  evn:errors

    {'/branches/ACME-1.0.X/': ['known root subtree path copied to valid root path']}

  evn:roots

    {'/trunk/': {'created': 1}}

  svn:author

    trent

  svn:date

    2015-02-12T08:17:25.678052Z

  svn:log

    Create branch ACME-1.0.X

Table 7 Example output from svn proplist

Primary design motivation for adding this functionality was that the unit tests for <https://github.com/enversion/enversion/issues/35> needed to be able to programmatically parse revprop output. Having JSON output, where the propname prefix (the part that comes before ‘:’, e.g. ‘evn’ for ‘evn:roots’) is a key to another dict of key/values, is useful, as it simplifies the parsing logic.

# Repository Layout: Single vs Multiple Component

Enversion has built-in support for two types of repository layouts: single-component layout and multiple-component layout. This is also referred to as component depth.

A single-component repository has a depth of 0 and would have a layout where the standard tags, branches and trunk directories are at the root of the repository:

/tags/

/v1.0/

/v1.1/

/branches/

/v1.x/

/trunk/

Figure 3 Example Single-Component Layout

A multi-component repository has a depth of 1 and would have a layout where the tags, branches and trunk directories live one level under the root directory – with the actual root directory being the name of the component:

/widget/

/tags/

/v1.0/

/v1.1/

/branches/

/v1.x/

/trunk/

/gadget/

/tags/

/v2.0/

/branches/

/v2.x/

/trunk/

Figure 4 Example Multiple-Component Layout

# Configuration Reference

## [main]

### blocked-file-extensions-regex

|  |  |
| --- | --- |
| Data Type | String |
| Default Value | \.(com|ocx|mdb|dll|war|jar|so|exe|o|bin|iso|zip|tar|tgz|dat|tar\.gz|msi|msp|7z|pkg|rpm|nupkg|deb|dmg)$ |
| Since | *v0.2.15* |
| Description | If set, a case-insensitive regular expression search is performed against each new path in a commit, and if a match is found, that path is flagged with the *BlockedFileExtension* error.  This functionality can be disabled with an empty string, e.g.:  blocked-file-extension-regex =  Use the evnadmin verify-path-matches-blocked-file-extensions-regex command once you have changed this value to verify that the regular expression is behaving as you expect. |

Table 8 Configuration: blocked-file-extension-regex

### custom-hook-classname

|  |  |
| --- | --- |
| Data Type | String |
| Default Value | evn.custom\_hook.DummyCustomHook |
| Since | *v0.2.14* |
| Description | This is the name of a Python class that Enversion will create an instance of during pre and post-commit hooks. It is a literal string value that should represent a fully-qualified class name (i.e. include module prefix). The Python environment should be set up such that Enversion can import the containing module, as this is how the class name is resolved. (See [evn.util.load\_class](https://github.com/enversion/enversion/blob/master/lib/evn/util.py#L471) for the exact code used to load the class.)  The value of this property must always resolve to a valid class name that derives from [evn.custom\_hook.CustomHook](https://github.com/enversion/enversion/blob/master/lib/evn/custom_hook.py#L4), which is why the default value refers to a dummy hook class that doesn’t do anything in its pre\_commit and post\_commit callbacks.  As an invalid class name will prevent hooks from running, it is recommended that this property be set via the evnadmin set-repo-custom-hook-class command. |

Table 9 Configuration: custom-hook-classname

### max-file-size-in-bytes

|  |  |
| --- | --- |
| Data Type | Integer |
| Default Value | 26214400 (25MB) |
| Since | 0.2.7 |
| Description | When set, blocks any file from being added to the repository that is over the max size, and blocks any existing file from growing past the maximum size. Exclusions can be added via the max-file-size-exclusion-regex configuration property.  This functionality can be disabled with an empty string, e.g.:  max-file-size-exclusion-regex = |

Table 10 Configuration: max-file-size-in-bytes

### max-file-size-exclusion-regex

|  |  |
| --- | --- |
| Data Type | String |
| Default Value | <no value> |
| Since | *v0.2.16* |
| Description | If set, files matching this pattern are excluded from the max file size restrictions. An administrator would set this configuration property to match a file (or set of files via a wild card or extended regex using |) that is permitted to grow past the maximum file size (currently defaults to 25MB).  Use the evnadmin verify-path-matches-max-file-size-exclusion-regex command once you have changed this value to verify that the regular expression is behaving as you expect. |

Table 11 Configuration: max-file-size-exclusion-regex

# Errors, Warnings and Notes

## Errors

### BlockedFileExtension

|  |  |
| --- | --- |
| Format | “blocked file extension” |
| Controlled By | blocked-file-extensions-regex |
| What It Means | The affected file matched the regex specified above. |

Table 12 Error: BlockedFileExtension