grc Documentation

Release 1.0

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Contents

CHAPTER 1

Generic Colorizer

Note: Inspired by http://kassiopeia.juls.savba.sk/~garabik/software/grc.html

`grc` allows you to colorize (even transform) shell output.

CHAPTER 2

Alternatives

2.1 The original `grc`

Available at http://kassiopeia.juls.savba.sk/~garabik/software/grc.html

While the original `grc` is a bit smarter with subprocesses, this rewrite focuses on ease of use (including *Installation*, *Configuration* and source-code access).

Installation should also honour the Linux FHS

2.2 `sed` or `awk`

`sed` and `awk` are extremely powerful tools, and can certainly do what `grc` does. They will certainly perform better on large streams. It's their intended use afterall. *However*, they both use an archaic and arcane syntax for their scripts. Additionally, if you would like to colorize your output with these, you need to work with ANSI escape sequences. `grc` aims to simplify this by having a more readable *Configuration* syntax, and by hiding the ANSI escape sequences.

CHAPTER 3

Installation

GRC follows standard Python packaging guidelines and can be installed using:

```
pip install grc
```

If you do not have administrative permissions on your system you can install it as user:

```
pip install --user grc
```

Or, in any case install it into an isolated environment:

```
python3 -m venv /path/to/your/installation
/path/to/your/installation/bin/pip install grc
```

CHAPTER 4

Usage

4.1 Read lines from `stdin` and emit modified/colorized lines on `stdout`

Note: This is the best supported mode of operation.

4.1.1 Synopsis

```
<some_process> | grc -c <config>
```

4.1.2 Example

```
tail -f /var/log/apache2/access.log | grc -c apache_access
```

Advantages

- Only the stream you are sending to `grc` is affected.
- No known side-effects

Disadvantages

- As `grc` only sees a stream, it cannot determine what application is emitting the stream. You have to specify the config manually.

4.2 Spawn a subprocess, capture it's output

Note: Use this if you don't care about the downsides, and are lazy to type.

4.2.1 Synopsis

```
grc <some_procss>
```

4.2.2 Example

```
grc aptitude search python
```

Advantages

- Much less to type
- Can auto-detect the config by using the sub-process application name.

Disadvantages

- Spawning a subprocess and interacting with it's IO is non-trivial on a TTY/PTY. To simplify the code, `grc` uses `pexpect` to do the IO magic.
- `stdout` and `stderr` of the subprocess are combined into one stream, which is then emitten on grc's `stdout`.[1]
- The output may not use all of the available terminal width.[1]

[1] `grc` uses `pyexpect` to deal with TTY pecularities. This will however have two side-effects. First, `stdout` will be combined with `stderr`. And second, terminal width may not be well respected.

CHAPTER 5

Configuration

`grc` searches three locations for configuration files in order:

- `~/.grc/conf.d/<confname>.yml`
- `/etc/grc/conf.d/<confname>.yml`
- `/usr/share/grc/conf.d/<confname>.yml`

The first matching config file wins. This means, you can override any system-wide configs with your own concoctions.

5.1 Syntax

`grc` uses YAML as config syntax. Comparing to `.ini` and `json` files (both included in the Python stdlib), this syntax lends itself much better to the requirements of this application.

5.2 Basic structure

- The config file is separated into sections (contexts). It has to have at least the `root` context.
- Each context has a list of rules. These rules fire if a line contains a given regular expresssion. The first matching rule wins.
- The line will then be replaced with the string contained in the `replace` value. You can use back-refs if you used capture groups in your regular expressions. Colours can be insterted using `${t.color_name}`. You should always insert a `${t.normal}` after using a color, to reset to the terminal default. The colors are provided by the package blessings. The `t` variable is a reference to a `blessings` terminal instance so you should be able to use it as it is documented on the `blessings` homepage.
- Rules may define, that processing should *not* stop using the `continue: yes` flag. In that case, the same line will be matched with the following rule as well.
- Additionally, rules may "push" another context onto the stack. If that's the case, the rule will be processed, and all following lines will be matched against rules contained in the context named by the `push` value.

- If in a non-root context, a rule may "pop" the current context from the stack using the `pop: yes` action.

See *Config Reference* for more details.

5.3 Annotated Example

```
# the primary context. This section must exist!
root:
    - match: '^(running)(.*)'
      # demonstrating replacements /and/ colorizing
      replace: '*** ${t.green}\1${t.normal}\2'

    - match: '^(writing)(.*)'
      replace: '>>> ${t.yellow}\1${t.normal}\2'

    - match: '^(reading)(.*)'
      replace: '<<< ${t.blue}\1${t.normal}\2'

    - match: '^(Processing dependencies for)(.*)'
      replace: '${t.green}\1${t.normal}\2'
      # switch to the "dependencies" context
      push: dependencies

    - match: '^(Installing.*)'
      replace: '>>> ${t.green}\1${t.normal}'

# the "dependencies" context
dependencies:
    - match: '^(Finished processing dependencies for)(.*)'
      replace: '${t.green}\1${t.normal}\2'
      # Revert back to the "root" context
      pop: yes

    - match: '^(Searching for )(.*)$'
      replace: '\1${t.blue}\2${t.normal}'
      # switch to the "dependency" context
      push: dependency

# the "dependency" context
dependency:
    # Let's prepend all lines with a small indent and pipe.
    # To do this, we specify a "match-all" regex, replace the line, and
    # specify that we will continue with the next matching rule using
    # "continue"
    - match: '(.*)'
      replace: ' | \1'
      continue: yes

    # Note that after the above rule, all lines are prepended with
    # additional text. We need to include this in the regex!
    - match: '^ \| (Installing.*)'
      replace: ' | >>> ${t.green}\1${t.normal}'

    - match: '^ \| (Running.*)'
      replace: ' | ${t.green}\1${t.normal}'
```

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```
  - match: '^ \| (Best match.*)'
    replace: ' | ${t.green}\1${t.normal}'

  - match: '^ \| (WARNING|warning)'
    replace: ' | ${t.yellow}\1${t.normal}'

  - match: '^ \| Installed(.*)'
    replace: ' | Installed\1\n'
    pop: yes
```

CHAPTER 6

Config Reference

6.1 Main Level

root Specifies the primary context

All other keys represent a context you `pushed` somewhere.

6.2 Contexts

A context is simply a list of rules

6.3 Rules

match *Type*: `string`

A python regular expression. If this matches somewhere in the input line, all occurrences will be replaced with the string specified in `replace`.

Note: While YAML does not enforce you to enclose strings in quotes, I is strongly recommend you use **single** quotes for regexps to avoid trouble with string escapes (backslashes).

replace *Type*: `string`

If `continue` is false (the default), this string will be emitted to `stdout`. Otherwise, this string will be passed to the next matching rule. Not that the following rule sees the *modified* string!

Note: While YAML does not enforce you to enclose strings in quotes, I is recommend using **single** quotes if using backreferences (backslashes).

continue *Type*: `boolean`

If true, don't write the string yet to `stdout`. Instead, pass it on to the next matching rule.

push *Type*: `string`

Pushes a new context onto the stack. All following lines from `stdin` will be matched agains rules in the new context.

Note: This may change in a future release to give you yet more control

---

pop *Type*: `boolean`

If this is set to true, then return to the previous context after this rule has been processed. If in the `root` context, this is a no-op.

Note: This may change in a future release to give you yet more control

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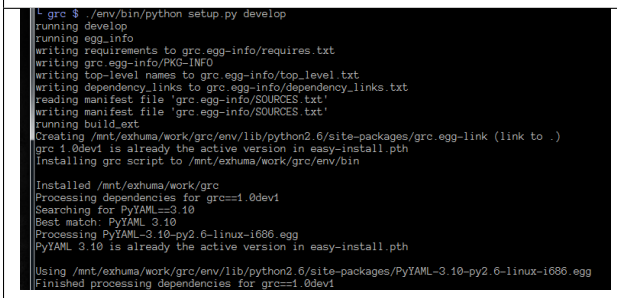
CHAPTER 7

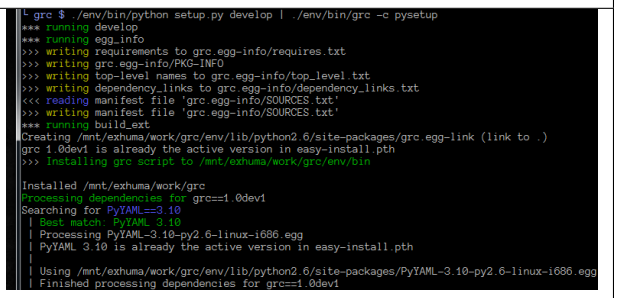
Screenshots

A python setup session

Before

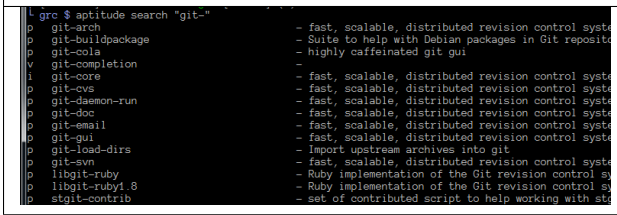


After

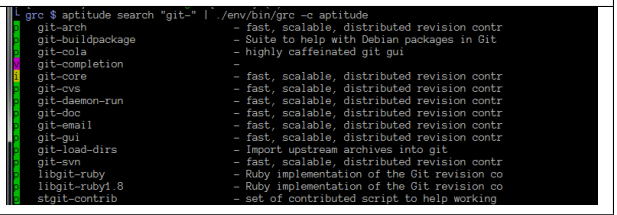


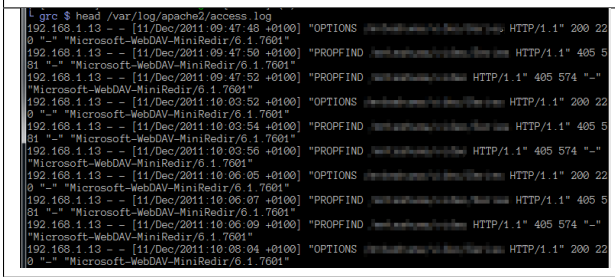
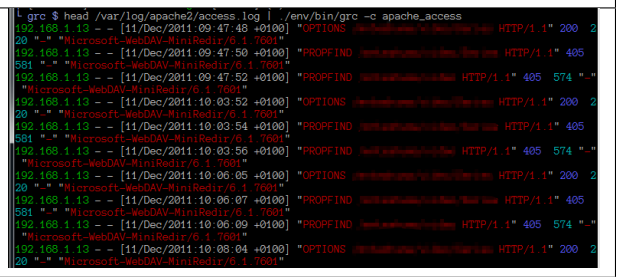
Simple aptitude search

Before



After



Apache access_log	
Before	After
	

CHAPTER 8

Footnotes

CHAPTER 9

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