

Autobuild

Automate building software and generate build status summary
for version 5.0, 25 November 2008

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1 Introduction

Autobuild is a package that process build logs generated when building software. Autobuild is primarily focused on packages using Autoconf and Automake, but can be used with other build systems too. Autobuild generates an HTML summary file, containing links to each build log. The summary include project name, version, build hostname, host type (cross compile aware), date of build, and indication of success or failure. The output is indexed in many ways to simplify browsing.

The quickest way to get an understanding of what Autobuild can do for you, is to look at some example output. For now, we recommend looking at how Autobuild is used in the GNU Libidn project, see <http://autobuild.josefsson.org/libidn/>.

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2 Tutorial

The first step is to collect build logs of your package.

```
jas@latte:~/src/libidn-0.5.0$ ./configure > ~/libidn.txt
jas@latte:~/src/libidn-0.5.0$ make check >> ~/libidn.txt
```

Now let Autobuild parse the file.

```
jas@latte:~/src/libidn-0.5.0$ cd
jas@latte:~$ autobuild --dry-run --verbose libidn.txt
'libidn.txt':
Project: libidn
Revision: 0.5.0
Mode: default
Hosttype: i686-pc-linux-gnu
Buildtype: i686-pc-linux-gnu
Hostname: unknown
Timestamp: unknown
Status: ok
jas@latte:~$
```

Everything went fine, except possibly that the hostname and timestamp have default looking values. If Autobuild is not able to guess more important values, such as the project name, you may have to use a command line parameter, e.g. `--project`. You could also consider improving the guessing logic.

Now, one build log isn't much if you want to make an overview. Let's create another build log.¹

```
jas@latte:~/src/libidn-0.5.1$ td > ~/libidn2.txt
```

If you have Emacs and `htmlize.el` installed, you can markup this log file up using the `htmlize` tool.

```
jas@latte:~$ htmlize libidn2.txt libidn2.html
jas@latte:~$
```

Ok, now we have two build logs, and one of them has even been converted into HTML format. Let's generate a summary for them. Notice that here Autobuild is actually parsing an HTML page, which can be less reliable than parsing a text file.

```
jas@latte:~$ autobuild --verbose libidn.txt libidn2.html > example.html
'libidn.txt':
Project: libidn
Revision: 0.5.0
Mode: default
Hosttype: i686-pc-linux-gnu
Buildtype: i686-pc-linux-gnu
Hostname: unknown
Timestamp: unknown
Status: ok
```

¹ The script 'td' is not part of Autobuild. It is responsible for logging on a remote machine and building a package – it may be cleaned up and discussed here in the future.

```
'libidn2.html':  
Project: libidn  
Revision: 0.5.1  
Mode: default  
Hosttype: i386-unknown-netbsdelf1.6  
Buildtype: i386-unknown-netbsdelf1.6  
Hostname: 192.233.54.143  
Timestamp: unknown  
Status: ok  
jas@latte:~$
```

See the 'examples/' sub-directory in the Autobuild source code distribution, it contain the 'libidn.txt' and 'libidn2.txt' files, and a Makefile that will execute the above commands. In that directory, you can remove the distributed 'example.html' and type *make example.html* to regenerate it.

3 Integrating ‘autobuild.m4’ In Your Project

A normal build log from an Autoconf/Automake based project do normally not include the project name, revision, time stamp of build or host name of the build host. Specifying these values using `--project` etc (see [Chapter 4 \[Invoking autobuild\], page 5](#)) can be tedious, especially considering that it would be so simple for the Autoconf ‘`configure`’ script to print them.

To solve the above problem, Autobuild includes an M4 macro suitable for use in your Autoconf project, invoked from ‘`configure.ac`’. Properly installed, the macro will make your project print something similar to the following output (this example is what the Autobuild itself prints during its build), as part of its build. This format is later recognized by Autobuild.

```
...
checking build system type... i686-pc-linux-gnu
checking host system type... i686-pc-linux-gnu
configure: autobuild project... autobuild
configure: autobuild revision... 1.2
configure: autobuild hostname... latte
configure: autobuild timestamp... 20040708-163123
...
```

To use the macro, put something like the following in your ‘`configure.ac`’:

```
AB_INIT
```

Then make sure your Autoconf installation can find the ‘`autobuild.m4`’ file, which should have been installed when you installed Autobuild.

The macro can take an optional parameter, the build mode, as follows:

```
AB_INIT(whatever)
```

This would result in an additional message:

```
...
configure: autobuild mode... whatever
...
```

4 Invoking autobuild

4.1 Synopsis

```
autobuild [OPTION]... FILE...
```

4.2 Description

Read and parse build logs to find project name, revision, build mode, build host type, build type (for cross compile builds), hostname, and timestamp, then print an HTML page with information and links to the logs.

See [Chapter 2 \[Tutorial\], page 2](#), for more discussion.

Mandatory arguments to long options are mandatory for short options too.

```
--abort
    Abort if any of the following values cannot be guessed: project
    name, revision, host type, and build type.

-n, --dry-run
    Just parse, dont print output.

-s, --skip-unknown
    Skip unparsable files.

-v, --verbose
    Explain what is being done.
```

For use when autobuild fail to guess the values properly:

```
-p, --project=STRING
    Specify project name.

--revision=STRING
    Specify project revision.

--mode=STRING
    Specify build mode (typically default).

--hosttype=STRING
    Specify host type (e.g., i686pclinuxgnu).

--buildtype=STRING
    Specify build type (e.g., m68kuclinuxelf). Different from
    hosttype for cross compiles.

--hostname=STRING
    Specify name of host log was created on.
```


`--timestamp=STRING`

Specify when build was made. Any date format will work, but 'YYYY-MM-DD+HH.MM.SS' is recommended.

`--status=STRING`

Outcome of build. Any string will work, but "ok" and "fail" are recommended for the two basic outcomes.

Other options:

`--help` Display this help and exit.

`--version`

Output version information and exit.

5 Invoking htmlize

5.1 Synopsis

Add markup to file and save as HTML.

```
htmlize [OPTION]... INFILE [OUTFILE [EMACS-MODE]]
```

5.2 Description

Launch Emacs and load *INFILE* into a buffer, then invoke a major mode for font locking, and render the fontified buffer as HTML, saving the result into *OUTFILE*.

Emacs must have ‘htmlfontify.el’ installed in its load-path.

If *OUTFILE* is not specified, it will use *INFILE* appended with .html.

If *EMACS-MODE* is not specified, *compilation-mode* will be used.

Options:

`--emacs COMMAND`

Use specified command to invoke emacs, e.g. "emacs21".

`--mode MODE`

Fontify file using specified Emacs mode, defaults to "compilation-mode". E.g., "sh-mode".

`-f, --force`

Overwrite *OUTFILE* if it exists, instead of exiting unsuccessfully with an error message.

`-u, --update`

Only write to *OUTFILE* when *OUTFILE* does not exist, or when *INFILE* is more recent than *OUTFILE*.

`-h, --help`

Display this help and exit successfully.

`--version`

Display version information and exit successfully.

Environment variables:

`EMACS` The Emacs editor command.

Simple example:

```
htmlize mybuildlog.txt mybuildlog.html
```

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