
tomahawk Documentation

Release 0.7.4.1

Kazuhiro Oinuma

August 21, 2016

1	What is tomahawk?	1
1.1	Executes a command into many remote hosts	1
1.2	Copy files to many remote hosts or copy files from remote hosts to local	1
2	Contents:	3
2.1	How to install tomahawk	3
2.2	tomahawk manual page	3
2.3	tomahawk-rsync manual page	6
2.4	tomahawk Recipes	8
2.5	Changes	9
3	Indices and tables	15

What is tomahawk?

tomahawk enables following 3 things.

- Executes a command into many remote hosts
- Copy local files to many remote hosts
- Copy files from remote hosts to local

1.1 Executes a command into many remote hosts

tomahawk is a program that enables to execute a command into many hosts.

```
$ tomahawk -h host1,host2,host3 uptime
```

—> ‘uptime’ command will be executed in host1, host2, and host3 with following output.

```
oinume@host1 % uptime
22:41:27 up 10 days,  3:26,  1 users,  load average: 1.11, 1.13, 1.11

oinume@host2 % uptime
22:41:28 up 20 days,  4:26,  2 users,  load average: 2.11, 2.13, 2.11

oinume@host3 % uptime
22:41:29 up 30 days,  5:26,  3 users,  load average: 3.11, 3.13, 3.11
```

1.2 Copy files to many remote hosts or copy files from remote hosts to local

tomahawk-rsync is a program that enables to copy files <into/from> many hosts.

```
$ tomahawk-rsync -h host1,host2,host3 test.py /tmp/test.py
```

—> ‘test.py’ is copied to host1, host2 and host3.

```
$ tomahawk-rsync -f web.list /usr/local/apache2/conf/httpd.conf /tmp/httpd.conf
```

—> ‘httpd.conf’ is copied to hosts which listed in ‘web.list’.

```
$ tomahawk-rsync -h host1,host2 -m pull /usr/local/apache2/conf/httpd.conf /tmp/conf/
```

—> 'httpd.conf' is copied from host1 and host2 to local directory /tmp/conf as 'host1__httpd.conf' and 'host2__httpd.conf'.

Contents:

2.1 How to install tomahawk

2.1.1 Requirements

- python \geq 2.4
- argparse (required only with python $<$ 2.7)
- multiprocessing (required only with python $<$ 2.6)
- pexpect
- pytest (required for testing)
- flexmock (required for testing)

2.1.2 Installation

tomahawk distributions is in the [pypi](#), so the easiest way is using pip or easy_install

```
$ sudo pip install tomahawk
```

or

```
$ sudo easy_install tomahawk
```

Or you can use traditional way

```
$ tar xvfz tomahawk-x.y.z.tar.gz
$ cd tomahawk-x.y.z
$ sudo python setup.py install
```

2.2 tomahawk manual page

2.2.1 SYNOPSIS

tomahawk [*options*] command

2.2.2 DESCRIPTION

tomahawk is a program that enables to execute a command into many hosts.

```
$ tomahawk -h host1,host2,host3 uptime
```

—> ‘uptime’ command will be executed in host1, host2, and host3 with following output.

```
oinume@host1 % uptime
22:41:27 up 10 days,  3:26,  1 users,  load average: 1.11, 1.13, 1.11

oinume@host2 % uptime
22:41:28 up 20 days,  4:26,  2 users,  load average: 2.11, 2.13, 2.11

oinume@host3 % uptime
22:41:29 up 30 days,  5:26,  3 users,  load average: 3.11, 3.13, 3.11
```

ssh

tomahawk executes a command via ‘ssh’. You can specify options for ssh with `-o/--ssh-options` and can configure ssh behavior with `$HOME/.ssh/config`.

hosts file

`-h` option enables you to specify hosts, another option ‘`-f`’, which is specifying hosts files. hosts file is listing host names like this

```
host1
host2
host3
#host4
```

Starting with “`#`” means commenting the host out.

shell operators

tomahawk executes commands via shell(/bin/sh), so you can use ‘`|`’ (pipe), ‘`&&`’, ‘`||`’ operators and so on.

```
$ tomahawk -h host1,host2 'ps auxww | grep python'
```

2.2.3 OPTIONS

These programs follow the usual GNU command line syntax, with long options starting with two dashes (‘`-`’). A summary of options is included below. For a complete description, see the Info files.

`-H, --hosts`

Specifies host names for sending commands. You can specify multiple hosts with ‘`,`’.

-f, --hosts-files

Specifies hosts files which listed host names for sending commands. You can specify multiple hosts files with ','.

Format of hosts file is below.

```
web01
web02
#web03
web04
```

A line of starting with '#' disables a host.

-l, --prompt-login-password

Prompts a password for ssh authentication at first. If the password is all the same between target hosts, you'll input a password just once.

--login-password-stdin

Read a SSH password from stdin instead of prompting.

-s, --prompt-sudo-password

Prompts a password for sudo.

-c, --continue-on-error

Continues to send commands even if any errors. The default behavior is fail-safe, means that tomahawk will stop if any errors.

-p, --parallel

Specifies a number of processes for parallel command execution. (default: 1) If your machine has multiple cpu cores, --parallel 2 .. N might be faster.

-t, --timeout

Specifies timeout seconds for a command.

-u, --ssh-user

Specifies ssh user. The default is a current logged in user.

-o, --ssh-options

Specifies ssh options.

-F, --output-format

Specifies command output format. The default is '`${user}@${host} % ${command}\n${output}\n`'

-V, --verify-output

Verify command output of all hosts. For additional information, see *Checking files on remote hosts*

-C, --conf

Specifies configuration file path. For additional information, see *Omit command line options by a configuration file*.

2.2.4 ENVIRONMENT VARIABLES

tomahawk's behavior is affected by the following environment variables.

TOMAHAWK_ENV

This variable specifies an environment of 'production', 'testing' or 'development'. If TOMAHAWK_ENV=production specified, *tomahawk* or *tomahawk-rsync* prompt as "command "%s" will be executed %s hosts. Are you sure? [yes/NO]: ". The environment variable exists for mis-execution of a command.

2.2.5 SEE ALSO

- *tomahawk-rsync(1)*
- *ssh(1)*

2.3 tomahawk-rsync manual page

2.3.1 SYNOPSIS

tomahawk-rsync [*options*] source destination

2.3.2 DESCRIPTION

tomahawk-rsync is a program that enables to copy files <into/from> many hosts.

```
$ tomahawk-rsync -h host1,host2,host3 test.py /tmp/test.py
```

—> 'test.py' is copied to host1, host2 and host3.

```
$ tomahawk-rsync -f web.list /usr/local/apache2/conf/httpd.conf /tmp/httpd.conf
```

—> 'httpd.conf' is copied to hosts which listed in 'web.list'.

```
$ tomahawk-rsync -h host1,host2 -m pull /usr/local/apache2/conf/httpd.conf /tmp/conf/
```

—> 'httpd.conf' is copied from host1 and host2 to local directory /tmp/conf as 'host1__httpd.conf' and 'host2__httpd.conf'.

rsync

tomahawk-rsync copies files via 'rsync'. You can specify options for rsync with -o/--rsync-options.

2.3.3 OPTIONS

These programs follow the usual GNU command line syntax, with long options starting with two dashes ('-'). A summary of options is included below. For a complete description, see the Info files.

-H, --hosts

Specifies host names for sending commands. You can specify multiple hosts with ','.

-f, --hosts-files

Specifies hosts files which listed host names for sending commands. You can specify multiple hosts files with ','.

Format of hosts file is below.

```
web01
web02
#web03
web04
```

A line of starting with '#' disables a host.

-l, --prompt-login-password

Prompts a password for ssh authentication of rsync at first. If the password is all the same between target hosts, you'll input a password just once.

-c, --continue-on-error

Continues to send commands even if any errors. The default behavior is fail-safe, means that tomahawk will stop if any errors.

-p, --parallel

Specifies a number of processes for parallel command execution. (default: 1) If your machine has many cpu cores, --parallel 2 .. N might be faster.

-t, --timeout

Specifies timeout seconds for a command.

-F, --output-format

Specifies command output format. The default is '\$ {user}@\${host} % \${command}n\${output}n'

-u, --rsync-user

Specifies rsync user. The default is a current logged in user.

-o, --rsync-options

Specifies rsync options. The default is '-av'

-m, --mirror-mode

Selection of 'push' or 'pull'. 'pull' means copy files from remote to local. The default is 'push'.

-C, --conf

Specifies configuration file path. For additional information, see *Omit command line options by a configuration file*.

2.3.4 ENVIRONMENT VARIABLES

tomahawk's behavior is affected by the following environment variables.

TOMAHAWK_ENV

This variable specifies an environment of 'production', 'testing' or 'development'. If TOMAHAWK_ENV=production specified, *tomahawk* or *tomahawk-rsync* prompt as "command "%s" will be executed %s hosts. Are you sure? [yes/NO]: ". The environment variable exists for mis-execution of a command.

2.3.5 SEE ALSO

- *tomahawk* (1)
- *ssh* (1)
- *rsync* (1)

2.4 tomahawk Recipes

Describes how to use tomahawk.

2.4.1 Formatting output

-F/--output-format option can change tomahawk's output.

```
$ tomahawk -h <hosts> -F '[$ {host}] $ {output}' -h <hosts> 'date'

[localhost] Sat Jun  2 02:21:39 JST 2012
[127.0.0.1] Sat Jun  2 02:21:40 JST 2012
```

You can specify following variables.

- \${user}
- \${host}
- \${command}
- \${output}

2.4.2 Checking files on remote hosts

Since v0.6.0, able to check files on remote hosts are all the same. Let's check httpd.conf is all the same with md5sum command.

```
$ tomahawk -h <hosts> -V 'md5sum /usr/local/apache2/conf/httpd.conf'
```

If output of some hosts are different, you'll get following errors.

```
...
[error] Detected different command output on following hosts.
...
```

2.4.3 Omit command line options by a configuration file.

Since v0.6.0, you can omit command line options by a configuration file. If `-c/--conf` option is specified, tomahawk and tomahawk-rsync read command line options from a configuration file. It is good to define commonly-used options in a configuration file.

Configuration file is just ini file like below.

```
[tomahawk]
options = --parallel 1

[tomahawk-rsync]
options = --parallel 1
```

That is equivalent to

```
$ tomahawk --parallel 1
$ tomahawk-rsync --parallel 1
```

2.5 Changes

2.5.1 0.7.4.1 <2016-08-21>

- bug: #57 UnicodeEncodeError (Thanks @sekino for reporting)

2.5.2 0.7.3 <2016-04-24>

- #54 Add Python 3.5 support
- #55 Fix line break problem when expect (Thanks @sekino)

2.5.3 0.7.2 <2014-07-27>

- bug: #50 pexpect-3.3 installation problem (ValueError: I/O operation on closed file)
- #49 Add Python 3.4 support

2.5.4 0.7.1 <2014-04-17>

- bug: #46 Cannot install latest ‘six’ on Python 2.4 (Thanks @n0ts)
- #47 Test various environments with Vagrant
- #48 Wrong command line options in documentation

2.5.5 0.7.0 <2014-03-02>

- bug: #41 Ignores User configuration on \$HOME/.ssh/config

2.5.6 0.7.0-rc1 <2013-11-16>

- feature: #42 Python3 support
- change: #43 An alias of `-hosts` should be `-H` (not `-h`)
- change: #44 Delete duplicated options `-expect-timeout`, `-no-sudo-password`

2.5.7 0.6.0 <2013-04-21>

- document: Add “For developers” section in README.rst

2.5.8 0.6.0-rc1 <2013-04-06>

- feature: #36 `-verify-output` option
- feature: #37 A short-cut ‘-F’ for `-output-format` option
- feature: #39 `-C/-conf`: Specify a configuration file
- document: #38 tomahawk recipes in documentation

2.5.9 0.5.2 <2012-06-01>

- bug: #35 A duplicated command output.

2.5.10 0.5.1 <2012-05-26>

- bug: #33 tomahawk should escape ‘\$’ and ‘‘
- bug: #34 parallel numer should be smaller than specified value when count of hosts is smal
- document: updateUpdated documentation.
- test: Updated testing codes (now uses pytest and flexmock)

2.5.11 0.5.0 <2012-04-01>

- Nothing changed from 0.5.0-rc3

2.5.12 0.5.0-rc3 <2012-03-24>

- More bug fixes
- change: Removed option in 0.5.0-rc1 ‘-prompt-login-password’ were back.
- feature: #16 New options -login-password-stdin, -sudo-password-stdin is now available
- change: #32 tomahawk now doesn’t prompt sudo password even if ‘sudo ...’ command given. If -s/-prompt-sudo-password is given, tomahawk prompts sudo password.

2.5.13 0.5.0-rc2 <2012-03-13>

- bug : tomahawk doesn’t stop completely when SIGINT(Ctrl-C) received

2.5.14 0.5.0-rc1< 2012-03-04>

- feature: #22 Output OS version, Python version, libraries versions
- bug: #27 Should call Pool#join() after all processes are finished
- bug: #26 tomahawk-rsync should say an easier error message when rsync command is not found.
- change: #16 Now tomahawk sends command with ‘ssh -t’, allocates pseudo-tty. **This changes default behavior of ‘tomahawk’.** Sended commands on remote host will be cancelled after *tomahawk* stops. (Ctrl-C or something) Old behavior is that remote commands never stop even if *tomahawk* stops. If you want old behavior, use -ssh-options='-T'. It disables pseudo-tty allocation.

2.5.15 0.4.5 <2012-01-15>

- bug: Fixed installation error for 0.4.4

2.5.16 0.4.4 <2012-01-14>

- document: New documentation with sphinx.
- bin/tomahawk_bootstrap.py was moved to tomahawk directory. (Thanks @mkouhei <<https://github.com/mkouhei>>)
- Created tools directory for developers.

2.5.17 0.4.3 <2011-12-03>

- bug: #21 Support sudo prompt in Ubuntu. (Thanks t9md)
- Added files. AUTHORS, COPYING

2.5.18 0.4.2 <2011-11-27>

- Updated a license(LGPL -> LGPL 2.1)
- Added man page (Thanks @mkouhei)

2.5.19 0.4.1 <2011-09-18>

- bug: #15 setup.py is not ready for python 2.4

2.5.20 0.4.0 <2011-07-14>

- feature: #13 Coloring output
- feature: #14 Support python 2.4
- bug: #12 Unknown distribution option: 'test_require'
- Refactoring whole source and adding more tests

2.5.21 0.3.4 <2011-07-05>

- feature: #8 -output-format option for tomahawk

2.5.22 0.3.3 <2011-07-04>

- bug: #6 Timeout problem when both ssh authentication and sudo password required
- bug: #10 tomahawk times out when japanese sudo password prompt
- change: #11 -expect-encoding is now obsoleted
- change: #9 release.py problem

2.5.23 0.3.2 <2011-06-18>

- bug: #6 Timeout problem when both ssh authentication and sudo password required
- bug: #7 Password is not masked even -debug

2.5.24 0.3.1 <2011-06-16>

- bug: #4 Pass a directory to -f option, traceback occurs
- bug: #6 Timeout problem when both ssh authentication and sudo password required

2.5.25 0.3.0 <2011-05-15>

- Improve handling keyboard interrupt.
- Fix tests.

2.5.26 0.3.0-rc1 <2011-04-17>

- bug: When execution timed out, looks like just failure.
- bug: All host names are not displayed when tomahawk-rsync with `--continue-on-error` fails.
- bug fix: Displays error hosts with specified order when `--continue-on-error` option specified.
- change: `--expect-timeout` becomes duplicated. Use `--timeout` instead.
- change: Default `--timeout` seconds is changed from 5 to 10.
- change: Changed filename format from `'%(filename)__(host)'` to `'%(host)__(filename)'` when tomahawk-rsync `--mirror-mode=pull`.
- Output further debug messages when `--debug`.

2.5.27 0.2.6 <2011-04-13>

- feature: `--no-sudo-password` is now available.

2.5.28 0.2.5 <2011-02-24>

- bug: When no sudo password, no command output.

2.5.29 0.2.4 <2011-02-08>

- bug: #3 tomahawk-rsync in tomahawk-0.2.3 is broken. See <https://github.com/oinume/tomahawk/issues#issue/3>

2.5.30 0.2.3 <2011-02-07>

- bug: #2 Shell quote problem. See <https://github.com/oinume/tomahawk/issues/closed#issue/2>

2.5.31 0.2.2 <2011-01-25>

- bug: when tomahawk-rsync `-m pull` specified, always appends hostname to local filename.

2.5.32 0.2.1 <2011-01-24>

- bug: tomahawk-rsync always outputs same hostname.

2.5.33 0.2.0 <2010-12-07>

- feature: When environment `"TOMAHAWK_ENV"` is `"production"`, tomahawk confirms command execution.
- feature: `--version` option is now available.

2.5.34 0.1.2 <2010-12-06>

- bug: tomahawk prints a password to stdout.

2.5.35 0.1.1 <2010-12-02>

- change: Renamed. tomahawk.py -> tomahawk, tomahawk-rsync.py -> tomahawk-rsync
- Fixed many bugs

2.5.36 0.1.0 <2010-11-26>

- The first release of python version.
- feature: Brand new option: -p (-parallel)
- change: -C option is now obsoleted. Use -c

Indices and tables
