tomahawk Documentation

Release 0.6.0

Kazuhiro Oinuma

March 02, 2014

CHAPTER 1

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’.

CHAPTER 2

Contents:

2.1 How to install tomahawk

2.1.1 Requirements

- python >= 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 xvzf 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 'l' (pipe), '&&', 'll' 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

DUPLICATED. Use -P/–prompt-password. Will be deleted in v0.6.0

-P, –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.

–expect-timeout

DUPLICATED. Use t (-timeout) instead. Will be deleted in v0.6.0.

-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.

-C, –conf

Specifies configuration file path.

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-ooptions.

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

DUPLICATED. Use -P/–prompt-password. Will be deleted in v0.6.0

-P, –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.

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 speficy following variables. * ${user} * ${host} * ${command} * ${output}

2.4.2 Checking a file in remote hosts is all the same

At first, copy a file to be compared to remote hosts.

```
$ tomahawk-rsync -h <hosts> /usr/local/apache2/conf/httpd.conf /tmp/httpd.conf
```

And then, diff 2 files with -V (–verify-output) option.

```
$ tomahawk -h <hosts> -V 'diff /tmp/httpd.conf /usr/local/apache2/conf/httpd.conf
...
[error] Detected different command output on following hosts.
...
```

2.4.3 Omit command line options by –conf option

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.

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
```

It is good to define commonly-used options in a configuration file.

CHAPTER 3

Indices and tables