CFEngine

CFEngine Installation Guide
A CFEngine Handbook

CFEngine AS

This short guide explains how to install the software and get it running.

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1 CFEngine Installation Guide

The quickest way to get started with CFEngine is to download and install binary packages, available from http://cfengine.com/inside/myspace. Installing and bootstrapping[1] these is a trivial operation, putting you two steps away from testing your first CFEngine policies. The other option is to download and compile the source code, available from http://cfengine.com/source_code.

This guide assumes that you are logged in as root, use `sudo` if you wish to install from a regular user account (e.g. `host$ sudo rmp -ihv` *packages*).

1.1 Install from packages

1.1.1 Unpack the software

System specific commands to unpack the software:

Red Hat or SUSE family
```
host# rpm -ihv packages
```

Debian family
```
host# dpkg --install  packages
```

The below examples are given for a Red Hat or SUSE, adapt them according to your system. To unpack:
```
host# rpm -ihv cfengine-community-3.x.y.rpm
```

1.1.2 Bootstrap CFEngine

> The below procedure is valid for CFE Nova and CFE Community v3.2 and up (packages for v3.2 will be released soon). For earlier versions of CFE Community binaries, you may proceed directly to section 1.5 Next steps.

This procedure applies to all hosts, but you should bootstrap the hub (policy server) first. Find the hostname or IP address of the hub, here we assume the address is '123.456.789.123' (do not bootstrap with a localhost address).

```
host# /var/cfengine/bin/cf-agent --bootstrap --policy-server 123.456.789.123
```

CFEngine will output diagnostic information upon bootstrap (written to command line and syslog; cf-agent will also return a value: ERROR: 1, SUCCESS: 0). Error messages will be displayed if bootstrapping failed, pursue these to get and indication of what went wrong and correct accordingly. If all is well you should see the following in the output:

```
-> Bootstrap to 123.456.789.123 completed successfully
```

---

[1] CFE Community 3.2 and up

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CFEngine should now be up and running on your system. It will copy its default policy files into 'masterfiles' on the hub (policy server) provided that the directory is empty (fresh install). When the clients are bootstrapped, they will contact the hub and copy them to their 'inputs' directory.

1.2 Build from source

See reference manual or INSTALL file in source code for dependencies. To build from source:

```
host# tar zxf cfengine-3.x.y.tar.gz
host# cd cfengine-3.x.y
host# ./configure
host# make
host# make install
```

1.3 Bootstrap from source

Find the hostname or IP address of the hub, here we assume the address is '123.456.789.123' (do not bootstrap with a localhost address).

On the hub (policy server):

> The below procedure is valid for the latest CFE Community v3.2 beta source code (available in repository). If you are using the 3.2.0b3 tar-ball, you will need to change the from-path when copying to masterfiles below:
>
> ```
> host# cp /usr/local/share/doc/cfengine/inputs/*.cf /var/cfengine/masterfiles/
> ```

```
host# /usr/local/sbin/cf-key
host# cp /usr/local/sbin/cf-* /var/cfengine/bin/
host# cp /usr/local/share/cfengine/masterfiles/*.cf /var/cfengine/masterfiles/
host# /var/cfengine/bin/cf-agent --bootstrap --policy-server 123.456.789.123
```

- The first run of cf-key will complain but it will create the local work directory tree, /var/cfengine, as well as a public and private key.
- We use "cp" to populate the the binaries cache in /var/cfengine/bin/.
- We also use "cp" to populate the masterfiles directory with the default configuration.
- The bootstrapping will configure the hub and make CFEngine run in the background.

On the clients (all other machines):

```
host# /usr/local/sbin/cf-key
host# cp  /usr/local/sbin/cf-* /var/cfengine/bin/
host# /var/cfengine/bin/cf-agent --bootstrap --policy-server 123.456.789.123
```

- The first run of cf-key will complain but it will create the local work directory tree, /var/cfengine, as well as a public and private key.
- Then we use "cp" to populate the the binaries cache in /var/cfengine/bin/.
- The bootstrapping will contact the hub (policy server), fetch the default configuration (policy files) to place them in /var/cfengine/inputs/, and make CFEngine run in the background.

CFEngine should now be up and running on your system.

1.4 Check installation

> The below procedure is valid for CFE Nova and CFE Community v3.2 and up (packages for v3.2 will be released soon).

The default configuration of CFEngine does nothing other than look after itself, running in the background. CFEngine will not display any messages if everything is OK, it will only look for possible policy updates from '`/var/cfengine/masterfiles`' on the hub (policy server).

How to actively assess the success of your installation:

1. Look at the process list on the systems with '`ps waux | grep cf`'. You should be able to see `cf-execd` running, and eventually other processes from the CFEngine suite like `cf-monitord cf-serverd`. CFE Nova users should also eventually see `cf-hub` running on the hub. Note that it may take 5–10 minutes before all the processes get started.

2. Look for files in '`/var/cfengine/inputs`' (Unix) or '`C:\Program Files\Cfengine\inputs`' (Windows).

1.5 Next steps

We recommend the following reading:

- CFEngine Concepts: `http://cfengine.com/manuals/cf3-conceptguide.html`
- Get started, first promises: `http://cfengine.com/manuals/cf3-getstarted.html`

For a complete overview:

- Tutorial: `http://cfengine.com/manuals/cf3-tutorial.html`
- Reference manual: `http://cfengine.com/manuals/cf3-reference.html`

Links to external resources:

- Getting Started with CFEngine 3 by Vertical Sysadmin:
  `http://www.verticalsysadmin.com/cfengine/Getting_Started_with_CFEngine_3.pdf`
- CFEngine 3 Beginning Examples:
  `http://www.verticalsysadmin.com/cfengine/beginning_examples/`
  This is, basically, a selection from /usr/local/share/doc/cfengine/ which has over 200 examples.
- "CFEngine 3 Tutorial" by Neil Watson:
  `http://watson-wilson.ca/2011/05/cfengine-3-cookbook-begins.html`

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