Hit the ground running...

with CFENGINE

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Time is short, so let's assume...

You have multiple hosts to administer.
You need a tool that can help distribute and
  maintain configurations.
You know how to download/install software for
  your platform[s].

What do you get when you install cfengine?

- 3 daemons
- 7 or 8 other executable programs
- documentation: man and info pages, extensive reference guide and tutorial (pdf, info, html formats) For example, try running:

```
info cfengine-Reference
```

- sample configuration files – great for examples and ideas (but don't tell you what is minimally necessary)

What elements of cfengine do I REALLY need to know about?

cfagent: Does ALL the heavy lifting, the 'agent' of change, the only absolutely required part, used on every managed host, runs from commandline, remote command, or via:

cfexecd: just a kind of wrapper for cfagent, run as daemon or from crond, helps with directing mail and sometimes with scheduling cfagent

cfservd: server process, the means to distribute configs, can also listen for remote command to execute cfagent (so might run on all hosts)

What config files are essential?

cfservd.conf: the server configuration file, says who can access what, could be simple as:

```
control:
  domain = ( example.com )
grant:
  /home/ebrown/cfengine   testbox.example.com
```

Essential config files, cont.

update.conf: retrieve latest cfengine config files from the server, need this file installed in working dir (/var/cfengine/inputs) to 'bootstrap' cfengine (bring in rest of configfiles), e.g:

```
control:
  actionsequence = ( copy )
  domain  = ( example.com )
copy:
  /home/ebrown/cfengine/master_inputs
    dest=/var/cfengine/inputs
    recurse=inf mode=0700 server=testbox
```

Essential config files, part III

cfagent.conf: could be the last config file you need, or could be one of many that together tell cfagent what actions to perform. Simple (working) example:

```
control:
  actionsequence = ( files )

files:
  /etc/shadow mode=0400 action=fixall
```

Typical sequence of events:

1. cfexecd, running as daemon or called by crond, execs **cfagent** (~ once an hour)

2. **cfagent** reads **update.conf** and contacts **cfservd** running on server or 'policyhost' to retrieve latest cfengine configs

3. **cfagent** reads **cfagent.conf** (and very likely your additional config files), determines defined **classes,** and begins to do your bidding

What are cfengine 'classes'?

- basically, just boolean variables: true or false
- a powerful way to determine cfengine actions
- used to group hosts together for actions
- (**'groups'** is a synonym)

Some classes are internally defined by cfengine (e.g. OS, CPU type...); but classes can also be user-defined, like:

```
classes:
   WebServer = ( host1 host2 )
```

How are classes useful?

Classes are used to qualify cfagent actions, that is: do some *action* only if some *class* is defined (i.e., true).

```
processes:
 any::  #(always true, and implied default)
   "crond" restart "/etc/init.d/crond start"
   "ntpd"  restart "/etc/init.d/ntpd start"
 WebServer::
   "httpd" restart "/etc/init.d/httpd start"
```

Hit the ground running, but avoid hurdles on your first lap...

Approach a new deployment in small steps:
1. Install **cfengine** on testhost
2. Get **cfservd** running (need **cfservd.conf**)
3. Get **cfagent** talking to cfservd on same host
   - create simple **update.conf/cfagent.conf**
4. Install **cfengine** on second host (h2)
5. get **cfagent** on h2 talking to **cfservd** on host1
6. have **cfexecd** run **cfagent** each hour (just start **cfexecd**, or, run from crond with '-F')

Resources

http://www.cfengine.org
http://www.cfwiki.org
http://www.gnu.org/software/cfengine
mailing list: help-cfengine@gnu.org

Please send feedback about this presentation to ebrown@lanl.gov