

```

      dF      @88>      x+=:z      S
      '88bu.  %8P      z`      ^%      :8
      '*88888bu      .      <k      .88
      ^"*8888N      .@88u      .@8Ned8"      ;888000
      <888'888k      b2WE "888L      '888E`      x88: `)8b.      8888
      9888 'Y"      888E 888E      888E 8888N=*8888      8888
      9888      888E 888E      888E %8" R88      8888
      9888      888E 888F      888E @8Wou 9%      .8888Lu=
      ?8888u.+/      .888N.888      888&      .888888P`      ^%888*
      "8888P'      `""888*""      R888"      ` ^"F      'Y"
      "p'      ""      ""      ""

```

cdist

next generation configuration management

Topics

- Configuration Management
- History
- Introduction to cdist

This is not a speech

Configuration Management

Manage configurations in a well defined way.

- Reproducible
- Documentation
- Idempotent
- Scaling out

Cdist history

- 2010-11-10: LISA'10 BoFs
- 2011-03-07: First public release of cdist
- 2011-09-16: Rewrite cdist core in python
- 2012-12-09: Release of cdist 2.1
- 2013-01-01: Founded ungleich GmbH
- ?

Development Requirements

- Minimale requirements to environment
 - DB (filesystem)
 - Target hosts (sh, ssh)
 - Technologies (fs, sh, ssh)
- Known DSL (sh)
- Scalable

Cdist Features

Secure (SSH)

Well documented

Push based

Simple

Open Source

Scalable

Shell Script

Zero dependencies

Familiar to sysadmins

More on the website...

cdist is very simple

Configuration

```
% mkdir -p ~/.cdist/manifest
% $EDITOR ~/.cdist/manifest/init

case "$__target_host" in
    localhost)
        __file /tmp/cdist-rocks
        ;;
esac
```

Configuration Run

```
% cdist config -v localhost
```

```
INFO: localhost: Running global explorers
```

```
INFO: localhost: Running initial manifest
```

```
/home/users/nico/.tmp/tmpn9mbqn/out/conf/manifest/init
```

```
INFO: localhost: Running object manifests and type explorers
```

```
INFO: localhost: Running manifest and explorers for
```

```
__file/tmp/cdist-rocks
```

```
INFO: localhost: Generating and executing code
```

```
INFO: Resolving dependencies...
```

```
INFO: localhost: Generating and executing code for
```

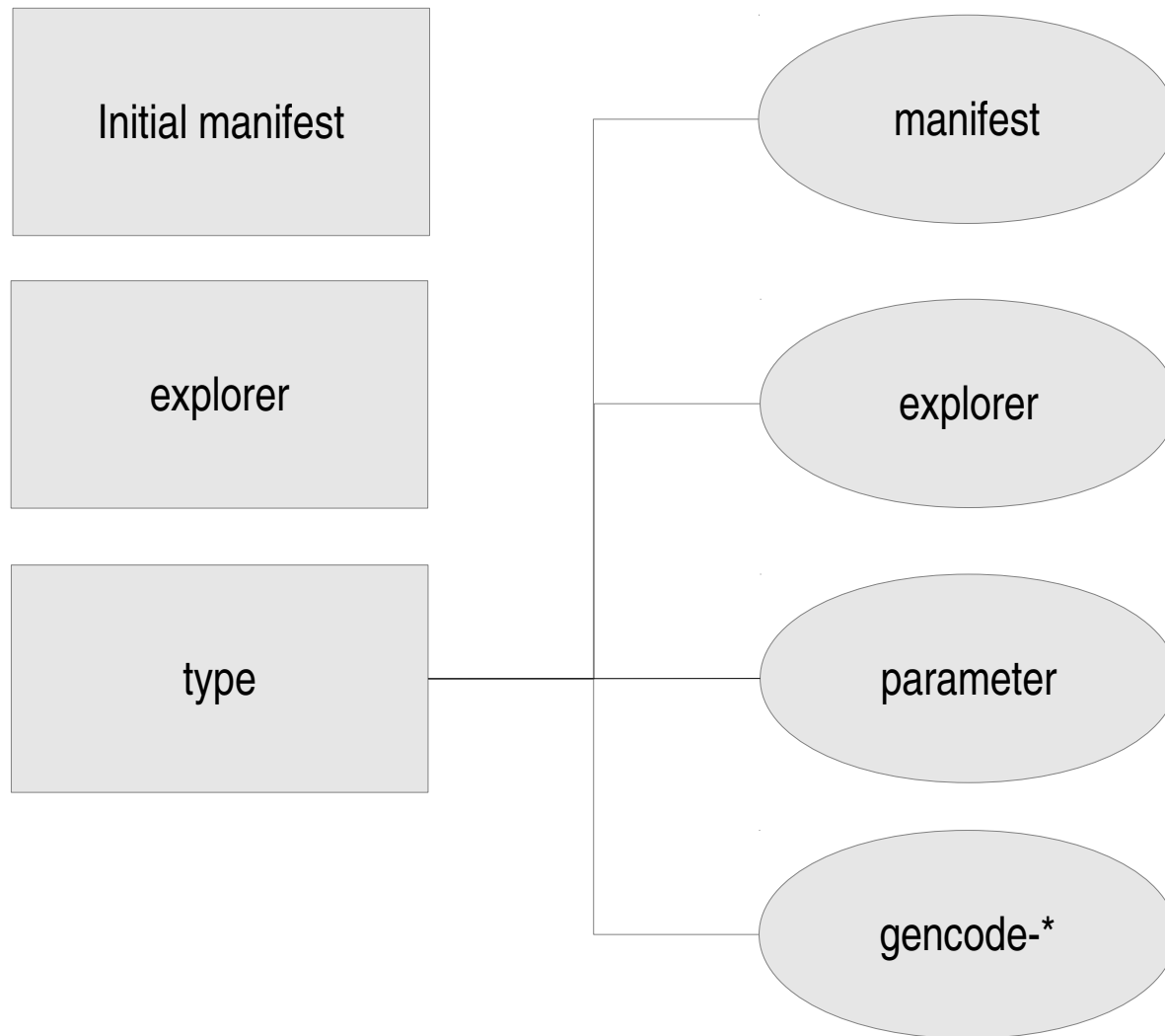
```
__file/tmp/cdist-rocks
```

```
INFO: localhost: Finished successful run in 4.075293779373169  
seconds
```

```
INFO: Total processing time for 1 host(s): 4.618075609207153
```

Behind the scenes...

The big picture



Manifest

- Shell script
- Define what to use

```
% $EDITOR ~/.cdist/manifest/init

case "$__target_host" in
    localhost)
        __file /tmp/cdist-rocks
    ;;
esac
```

Explorer

- Acquire state of the system

```
% cdist config -v localhost
```

```
INFO: localhost: Running global explorers
```

```
INFO: localhost: Running initial manifest...
```

- Examples of explorers:

- hostname
- Interfaces
- OS

Type

- Consist of
 - Manifest
 - Explorer
 - Manpage
 - Parameter
 - gencode-local, gencode-remote
- Bundle functionality

Create Type

```
% mkdir -p ~/.cdist/type/_speech  
% mkdir ~/.cdist/type/_speech/parameter  
% echo colour > ~/.cdist/type/_speech/parameter/required  
% $EDITOR ~/.cdist/type/_speech/manifest
```

```
colour=$(cat "$__object/parameter/colour")  
__file "$__object_id" --source - << eof  
The speech is $colour today!  
eof
```

```
% echo "__speech /tmp/speech --colour green" >> ~/.cdist/manifest/init
```


Type Being Used

```
% cdist config -v localhost
```

```
INFO: localhost: Running global explorers
```

```
INFO: localhost: Running initial manifest /home/users/nico/.tmp/tmp89xo___/out/conf/manifest/init
```

```
INFO: localhost: Running object manifests and type explorers
```

```
INFO: localhost: Running manifest and explorers for __file/tmp/cdist-rocks
```

```
INFO: localhost: Running manifest and explorers for __speech/tmp/speech
```

```
INFO: localhost: Running manifest and explorers for __file/tmp/speech
```

```
INFO: localhost: Generating and executing code
```

```
INFO: Resolving dependencies...
```

```
INFO: localhost: Generating and executing code for __file/tmp/cdist-rocks
```

```
INFO: localhost: Generating and executing code for __file/tmp/speech
```

```
INFO: localhost: Generating and executing code for __speech/tmp/speech
```

```
INFO: localhost: Finished successful run in 4.90235710144043 seconds
```

```
INFO: Total processing time for 1 host(s): 5.402170896530151
```

```
% cat /tmp/speech
```

```
The speech is green today!
```

Type Parameter

- Optional (optional_multiple)
- Required (required_multiple)
- Boolean

```
% __file /etc/shadow \  
    --mode 0600 --owner root --group shadow
```

```
% __ssh_authorized_keys root \  
    --key "$(cat ~/.ssh/id_rsa.pub)" \  
    --key "ssh-rsa AXYZAAB3NzaC1yc2..."
```

```
% __directory /home/services/nfs \  
    --parents
```

Type Gencode

- Shell script
- Outputs code to be executed
 - Local
 - Remote

```
__package_pip:  
    echo pip install \"$name\"  
  
__directory:  
    absent)  
    echo rm -rf \"$destination\"  
;;
```

Everything you ever need to know

Support

- FOSS project
- IRC: #cstar (freenode)
- Mailinglist
- Github: Issue tracking
- Commercial Support (<http://www.ungleich.ch>)