

## Managing Many Machines

`rdist`

Situation: Many identical machines.

Need to update/install file on each.

Solution 1: Log into each machine and install (pull).

Solution 2: Distribute the file from a central server (push).

`rdist`: remote file distribution program

From a designated management machine:  
distribute files to a list of machines  
run install programs on those machines

```
rdist [-f distfile] [-m host] [name ...]
```

Run this program on the management machine

defaults to a file called `distfile` in the local directory of the management machine.

usually: `rdist -f mydistfile`

Action: update all files and directories listed in `distfile`

Administrator: plan your update, place command in `mydistfile` run with `mydistfile`.

Simple `distfile` format (jaguar):

```
newfstab -> root@lab30.net.cecs.csulb.edu  
install /etc/fstab ;
```

Using the root account on lab30;

copy a new `fstab` file to lab30.

locally it is `newfstab` in .

on lab30 call it `/etc/fstab`

Multi-machine format `distfile`:

```
newgroups -> (  
    root@lab30.net.cecs.csulb.edu  
    root@lab31.net.cecs.csulb.edu  
    root@lab32.net.cecs.csulb.edu )  
install /etc/group ;
```

or a variable can be used

```
HOSTS = (  
    root@lab30.net.cecs.csulb.edu  
    root@lab31.net.cecs.csulb.edu  
    root@lab32.net.cecs.csulb.edu )  
newgroups -> ${HOSTS}  
install /etc/group ;
```

Multiple files can be moved, notification can be mailed.

```
wwwconf -> www@lab30.net.cecs.csulb.edu
install /etc/www/www.conf ;
notify sue@lab17.net.cecs.csulb.edu ;
newsuelogin -> sue@lab31.net.cecs.csulb.edu
install /home/sue/.login ;
```

using the www account on lab30,  
install the wwwconf (on lab30),  
notify sue on lab17 by mail of what happened

using the sue account on lab31  
install a new .login (sue on lab31)

#### Directory installs

```
FILES = ( /usr/src/yp /usr/X11 )
HOSTS = ( root@lab30 root@lab31 )
${FILES} -> ${HOSTS}
install -R ;
```

Recursively install the new directories,  
use the old names  
install with no name defaults to using the old  
directory/file names.

Commands may be run (as part of the install)

```
master.passwd -> root@unix70.cecs.csulb.edu
install /etc/master.passwd ;
special "pwd_mkdb /etc/master.passwd" ;
```

copy in the password file,  
then run the pwd\_mkdb command  
to make the password database.  
the command must be found on unix70

```
newsuelogin -> root@lab30.net.cecs.csulb.edu
install /home/sue/.login ;
special "chown sue /home/sue/.login" ;
```

copy in the new .login  
and set sue to own it.

Several commands could be run.

You can not `rdist` to a machine unless you have permission.

operates off `rlogin/rcp` permission (`.rhosts`)

`rdist` requires `rshd` to be enabled in `inetd.conf`

To install files to `root@unix70`  
using the root login on jaguar:

```
.rhosts (for root on unix70)
jaguar.net.cecs.csulb.edu root
```

To install files to `www@lab30`  
using the `css476zz` login on jaguar:

```
.rhosts (for www on lab30)
jaguar.net.cecs.csulb.edu css476zz
```

Client machines must have `rshd` enabled  
(uncommented in `inetd.conf`)

Side note:  
if your management machine gets compromised,  
all machines are compromised

## Using ssh

You have two facilities `ssh` and `scp`.

If you don't want to do passwords, set up your passwordless access.

Shell scripts.

```
scp newfile.cgi djv@lab99:/home/djv/
ssh djv@lab99 chmod 755 /home/djv/newfile.cgi
```

Copy the file over, run a command.  
(Note: the default command is a shell.)

Add a loop with a list of machines.  
Add a loop with a list of files.

Or:

- 1) build your distfile
  - 2) locate ssh (which ssh)
  - 3) tell `rdist` to use ssh
- ```
rdist -P /usr/bin/ssh
```