

Reviewing redirection

`command > file` creates an empty `file` and redirects the output of `command` to `file`.

`command >> file` appends the output of the `command` to `file`.

`command < file` takes the input of the of the `command` from `file`.

`command1 | command2` takes the output of `command1` and gives is an input to `command2`.

It's possible to do many redirections at the same time:

`command1 < infile | command2 | command3 | command4 > outfile`

Redirecting error messages (stderr)

Bourne Shell

command 2>*file* redirects stderr to *file*

command 2>&1 redirects stderr to stdout, so *command* 2>&1 > *file* will redirect both stderr and stdout to *file*

command > *fileout* 2>*fileerr* redirects stderr and stdout to different files.

C Shell

command >& *file*, *command* >>& *file*, *command1* |& *command2* redirect both stderr and stdout

command > *fileout* >& *fileerr* redirect stderr and stdout to different files

command > *fileout* |& *command* redirects stdout to *file* and “pipes” the stderr.

Exit code

When a command exits, it reports its status in an *exit code* — a number, usually between 0 and 255. 0 stands for “OK” or “yes” and non-zero exit codes stand for “error” or “no”.

Example: `grep` exits with exit status 0 if matches were found, 1 if no matches were found and 2 on errors.

Combining commands

`command1; command2` — run commands sequentially

`command1 && command2` — run `command2` if `command1` succeeded

`command1 || command2` — run `command2` if `command1` failed

`(command)` — run `command` in a *subshell*

Shell variables

All variables hold data in string format. Shell variables can be either local or environment variables. The difference is that environment variables are inherited by all subprocesses.

Common environment variables

Name	Meaning
PATH	List of directories to search for commands (:-separated)
HOME	Full path to home directory
USER	Your username (login)
SHELL	Full path to your login shell
TERM	Type of your terminal
DISPLAY	Your X-Windows display
MAIL	Full path to your mail box

Bourne Shell

```
var=value      unset var  
export var     export -n var  
export var=value
```

C shell

```
set var=value  unset var  
setenv var value  unsetenv var
```