hyperfine Command-line benchmarking

CONCEPTS

Commands run directly without a shell. Quote each command, and add -S when you need pipes, && or redirects.

setup once
↓ then
prepare before each run
↓ then
command timed
↓ then
conclude after each run
↓ finally
cleanup once
One benchmark, per command

The first command is the reference; the others are reported relative to it. Default is at least 10 runs, aiming for about 3 seconds.

RUNNING

hyperfine '*<cmd>*'
Benchmark a command

hyperfine '*<cmd1>*' '*<cmd2>*'
Compare commands side by side

hyperfine -r *<n>* '*<cmd>*'
Run exactly n times

hyperfine -m *<n>* '*<cmd>*'
Run at least n times

hyperfine -M *<n>* '*<cmd>*'
Run at most n times

hyperfine -w *<n>* '*<cmd>*'
Do n warmup runs first

hyperfine -n *<name>* '*<cmd>*'
Give a command a display name

hyperfine -i '*<cmd>*'
Ignore a non-zero exit code

hyperfine --show-output '*<cmd>*'
Show the command's output

PREPARING RUNS

-p '*<cmd>*' **/ --prepare**
Run before every timing run

-C '*<cmd>*' **/ --conclude**
Run after every timing run

PREPARING RUNS (cont.)

-s '*<cmd>*' **/ --setup**
Run once before a benchmark

-c '*<cmd>*' **/ --cleanup**
Run once after a benchmark

--prepare 'make clean' 'make'
Rebuild from scratch each run

PARAMETERS

-P *<var>* *<min>* *<max>* '*<cmd>* **{var}**'
Scan a numeric range

-P *<var>* *<min>* *<max>* **-D** *<step>* **...**
Set the scan step size

-L *<var>* **a,b,c** '*<cmd>* **{var}**'
Try a list of values

-L *<v1>* **a,b -L** *<v2>* **x,y** '*<cmd>* **{v1} {v2}**'
Benchmark all combinations

SHELL

-N / --shell=none
Run without a shell (default)

-S
Run through the default shell

--shell *<name>*
Use a specific shell, e.g. bash or zsh

With a shell, hyperfine measures an empty shell's startup and subtracts it. Skip the shell for commands under about 5 ms.

OUTPUT AND EXPORT

--export-json *<file>*
Save stats and every sample as JSON

--export-markdown *<file>*
Save a Markdown table

--export-csv *<file>*
Save one CSV row per command

--style *<type>*
auto, basic, full, nocolor, color or none

-h / --help
Show help

-V / --version
Show version