# Bats Bash test runner

## CONCEPTS

A test passes if every command in it succeeds (Bats runs tests with set -e); run never fails, so you assert on $status and $output afterwards.

**setup_suite** once per run
↓ then
**setup_file** once per file
↓ then
**setup** each test
↓ @test
**teardown** each test
↓ then
**teardown_file** once per file

## RUNNING

**bats** *<path>*...
Run files or directories of .bats files

**bats -r** *<dir>*
Recurse into subdirectories

**bats -f** *<regex>* *<path>*
Run only tests whose name matches

**bats --negative-filter** *<regex>* *<path>*
Skip tests whose name matches

**bats -c** *<path>*
Count tests without running them

**bats --abort** *<path>*
Stop at the first failing test

**bats -j** *<n>* *<path>*
Run tests in parallel (needs GNU parallel)

**bats -x** *<path>*
Trace commands like set -x

**bats --print-output-on-failure** *<path>*
Show $output of failed tests

**bats -T** *<path>*
Add timing to each result

**bats -v / bats -h**
Print version / help

## OUTPUT

**bats -p** *<path>*
Pretty output (default on a terminal)

**bats -t** *<path>*
TAP output (default when piped)

## OUTPUT (cont.)

**bats -F junit** *<path>*
JUnit XML for CI

**bats --report-formatter junit -o** *<dir>* *<path>*
Write a report file to <dir>

Exit code is 0 when all tests pass, 1 on any failure or when no tests are found.

## WRITING TESTS

**@test "***<name>***"**
**{** *<commands>* **}**
Define a test

**load** *<file>*
Source a helper relative to the test file

**skip ["***<reason>***"]**
Skip this test

**bats_require_minimum_version**
Fail on a too-old Bats: pass <ver>

**bats_load_library** *<name>*
Load a library from BATS_LIB_PATH

**echo "# *<msg>*" >&3**
Print a message during a test

## RUN AND ASSERT

**run** *<cmd>* **[args]**
Capture status and output; never fails

**run -***<N>* *<cmd>*
Fail unless exit status is N

**run !** *<cmd>*
Fail unless exit status is nonzero

**run --separate-stderr** *<cmd>*
Split stdout and stderr

**[ "$status" -eq 0 ]**
Assert exit status

**[ "$output" = "***<text>***" ]**
Assert combined output

**[ "${lines[0]}" = "***<text>***" ]**
Assert one output line

**[[ "$output" == *"***<part>***"* ]]**
Assert output contains text

**$stderr / ${stderr_lines[@]}**
Stderr (with --separate-stderr)

## RUN AND ASSERT (cont.)

run uses a subshell, so variables set by the command are gone afterwards. Call the function directly if you need them.

## SETUP AND TEARDOWN

**setup() { ... }**
Before each test

**teardown() { ... }**
After each test, even on failure

**setup_file() { ... }**
Once before all tests in a file

**teardown_file() { ... }**
Once after all tests in a file

**teardown_suite() { ... }**
Once per run after the last test

**$BATS_TEST_TMPDIR**
Fresh temp dir for each test

**$BATS_FILE_TMPDIR**
Temp dir shared within a file

**$BATS_TEST_DIRNAME**
Directory of the test file

## HELPER LIBRARIES

bats-support and bats-assert are separate repos, not part of Bats itself. Check the version your project installs before using them.

**load 'test_helper/bats-support/load'**
Load bats-support first

**load 'test_helper/bats-assert/load'**
Then bats-assert

**assert_success / assert_failure**
Check exit status after run

**assert_output "***<text>***"**
Check output (--partial, --regexp)

## RECIPES

### CI run with JUnit report

```
mkdir -p reports
bats -r --report-formatter junit
-o reports test/
# or machine-readable on stdout
bats -r -t test/ > results.tap
```