# Deno Secure TS runtime

**Specifier** jsr: npm: https: → `resolve` → **Cache** deno.lock pins it → `check` → **Type-check** TypeScript built in → `permissions` → **Run** sandboxed by flags

## CONCEPTS

Scripts run in a sandbox: no disk, network or env access unless you grant it with --allow-* flags (or answer the prompt).

## RUN AND PERMISSIONS

`deno run <file>`
Run a script or URL

`deno run -A <file>`
Allow everything (trusted code only)

`--allow-read[=<path>] / -R`
Allow file reads, optionally scoped

`--allow-write[=<path>] / -W`
Allow file writes

`--allow-net[=<host>] / -N`
Allow network access

`--allow-env[=<VAR>] / -E`
Allow reading env vars

`--deny-read=<path>`
Deny a path even if allowed more broadly

`--no-prompt`
Fail instead of asking for permission

## RUN AND PERMISSIONS (cont.)

`deno run --watch <file>`
Restart on file changes

`--env-file[=<path>]`
Load env vars from a file

`deno eval "<code>"`
Evaluate a snippet

`deno repl`
Interactive prompt

`deno serve <file>`
Run a default-export fetch handler as a server

`--inspect-brk`
Debugger: pause on first line

## TASKS AND CONFIG

`deno task`
List tasks in deno.json

`deno task <name>`
Run a task

`deno task "<prefix>:*"`
Run all matching tasks in parallel

`deno task -r <name>`
Run a task in every workspace member

`deno init <dir>`
New project with main.ts and a test

## TASKS AND CONFIG (cont.)

### deno.json task forms

| Form | Meaning |
|---|---|
| `"build": "deno run ..."` | Plain command string |
| `"command"` | Command in object form |
| `"description"` | Shown in task list |
| `"dependencies"` | Tasks run first, in parallel |

## DEPENDENCIES

`deno add <pkg>`
Add dependencies to the config

`deno add jsr:@std/<name>`
Add a JSR package

`deno add npm:<pkg>`
Add an npm package

`deno install`
Install all deps from deno.json/package.json

`deno remove <pkg>`
Remove a dependency

`deno outdated`
Show newer dependency versions

## DEPENDENCIES (cont.)

`deno outdated --update`
Update within semver-compatible range

`deno info [<file>]`
Show a module's dependency tree

`deno audit`
Scan dependencies for known vulnerabilities

## TEST AND CHECK

`deno test`
Run all tests

`deno test <file>`
Run one test file

`deno test --filter "<name>"`
Run tests matching a name

`deno test --coverage`
Collect coverage data

`deno test --parallel`
Run test files on several threads

`deno check <file>`
Type-check without running

A test is Deno.test("name", () ⇒ {...}) in a file named *_test.ts or *.test.ts.

## FORMAT AND LINT

`deno fmt`
Format all files

`deno fmt --check`
Fail if anything is unformatted

`deno lint`
Lint all files

`deno lint --fix`
Auto-fix what rules allow

## BUILD AND PUBLISH

`deno compile <file>`
Bundle into a standalone executable

`deno compile -o <name> <file>`
Name the output

`deno compile --target <triple>`
Cross-compile for another platform

`deno upgrade`
Update Deno itself

## RECIPES

### Start a TypeScript project

```
deno init my-app && cd my-app
deno add jsr:@std/assert
deno task dev
deno test
```