# Sphinx Documentation generator

**START HERE**

**`sphinx-quickstart`**
Scaffold a project

**`sphinx-apidoc -o <out> <pkg>`**
Stub pages for a package

**`sphinx-build -b html <src> <out>`**
Build the HTML

**`sphinx-build -j auto <src> <out>`**
Build in parallel

**`make html`**
Same via the Makefile

**`sphinx-build -W <src> <out>`**
Warnings fail the build

**`sphinx-build -E -a <src> <out>`**
Full clean rebuild

**`sphinx-build -b linkcheck <src> <out>`**
Find dead links

**conf.py + .rst files** source dir → `read + resolve` → **Doctrees** cached environment → `-b builder` → **Output** html, latex, man, text...

One source tree, many outputs

## CONCEPTS

Sources are reST (or Markdown via an extension) plus conf.py; sphinx-build turns them into any builder's output.

index.rst holds the root toctree; a page not listed in any toctree triggers a warning.

Builds are incremental: use -E when config or extensions changed, -a to rewrite all output.

## PROJECT SETUP

**`sphinx-quickstart`**
Interactive project scaffold

**`sphinx-quickstart -q -p <name> -a <author> -v <ver>`**
Non-interactive scaffold

## BUILDING

**`sphinx-build -b html <src> <out>`**
Build HTML

**`sphinx-build -M html <src> <out>`**
Make-mode build, doctrees under out

**`make html`**
Build via generated Makefile

## BUILDING (cont.)

**`make clean`**
Delete the build directory

**`-W`**
Treat warnings as errors
*Combine with --keep-going on old versions to see all warnings; always on since 8.1.*

**`-a`**
Write all output files

**`-E`**
Rebuild environment from scratch

**`-j auto`**
Parallel build on all CPUs

**`-n`**
Nitpicky: warn on missing references

**`-T`**
Show full traceback on errors

**`-w <file>`**
Also write warnings to a file

**`-D <key>=<value>`**
Override a config value

## BUILDERS

**`-b html`**
Standard HTML pages

**`-b dirhtml`**
HTML with pretty directory URLs

## BUILDERS (cont.)

**`-b singlehtml`**
Whole project in one HTML file

**`-b latex`**
LaTeX sources

**`make latexpdf`**
Build PDF via LaTeX

**`-b linkcheck`**
Check external links

**`-b dummy`**
Parse and check only, no output

**`-b doctest`**
Run doctests in the docs

**`-b coverage`**
Report undocumented Python objects

**`-b gettext`**
Extract .pot translation catalogs

## CONF.PY ESSENTIALS

**`project = "<name>"`**
Project name

**`release = "<x.y.z>"`**
Full version, used as |release|

**`extensions = ["<ext>"]`**
Load extensions

**`html_theme = "<theme>"`**
Pick the HTML theme

## CONF.PY ESSENTIALS (cont.)

**`html_static_path = ["_static"]`**
Extra static files

**`exclude_patterns = ["<glob>"]`**
Skip source files

**`nitpicky = True`**
Warn on every missing reference

**`sys.path.insert(0, os.path.abspath(".."))`**
Make your package importable

**`linkcheck_ignore = [r"<regex>"]`**
Skip URLs in linkcheck

## REST BASICS

**`Title\n=====`**
Section heading (underline)

**`*em* / **strong** / ``code``**
Inline markup

**`* item / 1. item / #. item`**
Bullet, numbered, auto-numbered

**`` `text <https://url>`__ ``**
Inline external link

**`.. code-block:: <lang>`**
Highlighted code block

**`paragraph::`**
Literal block follows, indented

## REST BASICS (cont.)

**`.. image:: <path>`**
Insert an image

**`.. note::`**
Admonition (also warning, tip...)

**`.. toctree::`**
Table of contents / page tree

## CROSS-REFERENCES

**`.. _<label>:`**
Define a label before a heading

**`:ref:`<label>``**
Link to a label

**`:doc:`<path>``**
Link to another document

**`intersphinx_mapping = {...}`**
Link to other projects' docs

## AUTODOC AND APIDOC

**`extensions = ["sphinx.ext.autodoc"]`**
Enable autodoc

**`.. automodule:: <pkg.mod>`**
Document a whole module

**`:members:`**
Include documented members

**`.. autoclass:: <pkg.Class>`**
Document a class

## AUTODOC AND APIDOC (cont.)

**`.. autofunction:: <pkg.func>`**
Document one function

**`autodoc_default_options = {...}`**
Default directive options

**`autodoc_typehints = "description"`**
Move type hints to the body

**`autodoc_mock_imports = ["<mod>"]`**
Fake heavy imports on build

**`sphinx-apidoc -o <out> <pkg>`**
Generate stub .rst per module

**`sphinx.ext.napoleon`**
Parse Google/NumPy docstrings

## RECIPES

**Strict CI build**

```
sphinx-build -W --keep-going -n
-b html \
  docs docs/_build/html
```

**Docs for a Python package**

```
sphinx-quickstart -q docs -p
MyPkg -a Me -v 1.0 \
  --ext-autodoc --
extensions=sphinx.ext.napoleon
sphinx-apidoc -o docs/api src/
mypkg
make -C docs html
```