Rocky Enterprise Linux 9.2 Manual Pages on command 'rustc.1'

$ man rustc.1

RUSTC(1) User Commands RUSTC(1)

NAME

rustc - The Rust compiler

SYNOPSIS

rustc [OPTIONS] INPUT

DESCRIPTION

This program is a compiler for the Rust language, available at https://www.rust-lang.org.

OPTIONS

-h, --help

Display the help message.

--cfg SPEC

Configure the compilation environment.

-L [KIND=]PATH

Add a directory to the library search path. The optional KIND can be one of:

dependency

only lookup transitive dependencies here

crate only lookup local `extern crate` directives here

native only lookup native libraries here

framework

only look for OSX frameworks here

all look for anything here (the default)

-l [KIND=]NAME

Link the generated crate(s) to the specified library NAME. The optional KIND can be one of static, dylib, or framework. If omitted, dylib is assumed.

--crate-type [bin|lib|rlib|dylib|cdylib|staticlib|proc-macro]

Comma separated list of types of crates for the compiler to emit.

--crate-name NAME

Specify the name of the crate being built.

--emit [asm|llvm-bc|llvm-ir|obj|metadata|link|dep-info|mir][=PATH]

Configure the output that rustc will produce. Each emission may also have an optional explicit output PATH specified for that particular emission kind. This path takes precedence over the -o option.

--print [crate-name|file-names|sysroot|target-libdir|cfg|target-list|
target-cpus|target-features|relocation-models|code-models|tls-models|
target-spec-json|native-static-libs|stack-protector-strategies|
link-args]

Comma separated list of compiler information to print on stdout.

-g Equivalent to -C debuginfo=2.

-O Equivalent to -C opt-level=2.

-o FILENAME

Write output to FILENAME. Ignored if multiple --emit outputs are specified which don't have an explicit path otherwise.

--out-dir DIR

Write output to compiler?chosen filename in DIR. Ignored if -o is specified. Defaults to the current directory.

--explain OPT

Provide a detailed explanation of an error message.

--test Build a test harness.

--target TARGET

Target triple for which the code is compiled. This option de?

faults to the host?s target triple. The target triple has the

general format <arch><sub>-<vendor>-<sys>-<abi>, where:

<arch> x86, arm, thumb, mips, etc.

<sub> for example on ARM: v5, v6m, v7a, v7m, etc.

<vendor>

pc, apple, nvidia, ibm, etc.

<sys> none, linux, win32, darwin, cuda, etc.

<abi> eabi, gnu, android, macho, elf, etc.

-W help

Print 'lint' options and default settings.

-W OPT, --warn OPT

Set lint warnings.

-A OPT, --allow OPT

Set lint allowed.

-D OPT, --deny OPT

Set lint denied.

-F OPT, --forbid OPT

Set lint forbidden.

-C FLAG[=VAL], --codegen FLAG[=VAL]

Set a codegen?related flag to the value specified. Use -C help

to print available flags. See CODEGEN OPTIONS below.

-V, --version

Print version info and exit.

-v, --verbose

Use verbose output.

--remap-path-prefix from=to

Remap source path prefixes in all output, including compiler di?

agnostics, debug information, macro expansions, etc. The from=to

parameter is scanned from right to left, so from may contain

'=', but to may not.

This is useful for normalizing build products, for example by removing the current directory out of pathnames emitted into the object files. The replacement is purely textual, with no consid? eration of the current system's pathname syntax. For example --remap-path-prefix foo=bar will match foo/lib.rs but not ./foo/lib.rs.

--extern NAME=PATH

Specify where an external rust library is located. These should match extern declarations in the crate's source code.

--sysroot PATH

Override the system root.

-Z FLAG

Set unstable / perma-unstable options. Use -Z help to print available options.

--color auto|always|never

Configure coloring of output:

auto colorize, if output goes to a tty (default);

always always colorize output;

never never colorize output.

CODEGEN OPTIONS

linker=/path/to/cc

Path to the linker utility to use when linking libraries, exe? cutables, and objects.

link-args='-flag1 -flag2'

A space?separated list of extra arguments to pass to the linker when the linker is invoked.

lto Perform LLVM link?time optimizations.

target-cpu=help

Selects a target processor. If the value is 'help', then a list of available CPUs is printed.

target-feature='+feature1,-feature2'

A comma?separated list of features to enable or disable for the

target. A preceding '+' enables a feature while a preceding '-' disables it. Available features can be discovered through llc -mcpu=help.

passes=val

A space?separated list of extra LLVM passes to run. A value of 'list' will cause rustc to print all known passes and exit. The passes specified are appended at the end of the normal pass man? ager.

llvm-args='-arg1 -arg2'

A space?separated list of arguments to pass through to LLVM.

save-temps

If specified, the compiler will save more files (.bc, .o, .no-opt.bc) generated throughout compilation in the output di? rectory.

rpath If specified, then the rpath value for dynamic libraries will be set in either dynamic library or executable outputs.

no-prepopulate-passes

Suppresses pre?population of the LLVM pass manager that is run over the module.

no-vectorize-loops

Suppresses running the loop vectorization LLVM pass, regardless of optimization level.

no-vectorize-slp

Suppresses running the LLVM SLP vectorization pass, regardless of optimization level.

soft-float

Generates software floating point library calls instead of hard? ware instructions.

prefer-dynamic

Prefers dynamic linking to static linking.

no-integrated-as

Force usage of an external assembler rather than LLVM's inte? grated one.

no-redzone

Disable the use of the redzone.

relocation-model=[pic,static,dynamic-no-pic]

The relocation model to use. (Default: pic)

code-model=[small,kernel,medium,large]

Choose the code model to use.

metadata=val

Metadata to mangle symbol names with.

extra-filename=val

Extra data to put in each output filename.

codegen-units=n

Divide crate into n units to optimize in parallel.

remark=val

Print remarks for these optimization passes (space separated, or "all").

no-stack-check

Disable checks for stack exhaustion (a memory?safety hazard!).

debuginfo=val

Debug info emission level:

0 no debug info;

1 line?tables only (for stacktraces and breakpoints);

2 full debug info with variable and type information.

opt-level=VAL

Optimize with possible levels 0?3, s (optimize for size), or z (for minimal size)

ENVIRONMENT

Some of these affect only test harness programs (generated via rustc --test); others affect all programs which link to the Rust standard li? brary.

RUST_TEST_THREADS

The test framework Rust provides executes tests in parallel. This variable sets the maximum number of threads used for this purpose. This setting is overridden by the --test-threads op?

tion.

RUST_TEST_NOCAPTURE

If set to a value other than "0", a synonym for the --nocapture flag.

RUST_MIN_STACK

Sets the minimum stack size for new threads.

RUST_BACKTRACE

If set to a value different than "0", produces a backtrace in the output of a program which panics.

EXAMPLES

To build an executable from a source file with a main function:

```
$ rustc -o hello hello.rs
```

To build a library from a source file:

```
$ rustc --crate-type=lib hello-lib.rs
```

To build either with a crate (.rs) file:

```
$ rustc hello.rs
```

To build an executable with debug info:

```
$ rustc -g -o hello hello.rs
```

SEE ALSO

rustdoc(1)

BUGS

See https://github.com/rust-lang/rust/issues for issues.

AUTHOR

See https://github.com/rust-lang/rust/graphs/contributors or use `git log --all --format='%cN <%cE>' | sort -u` in the rust source distribu? tion.

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