

Scheme: Compatibility Libraries and Executables

Version 8.2

July 16, 2021

Racket was once called “PLT Scheme,” and a number of libraries with names starting `scheme` provide compatibility with the old name. A few old executables are also provided.

Do not use `#lang scheme` to start new projects; `#lang racket` is the preferred language.

Contents

1	<code>scheme</code>	6
2	<code>scheme/base</code>	7
3	<code>scheme/async-channel</code>	8
4	<code>scheme/bool</code>	9
5	<code>scheme/class</code>	10
6	<code>scheme/cmdline</code>	11
7	<code>scheme/contract</code>	12
8	<code>scheme/control</code>	13
9	<code>scheme/date</code>	14
10	<code>scheme/dict</code>	15
11	<code>scheme/file</code>	16
12	<code>scheme/fixnum</code>	17
13	<code>scheme/flonum</code>	18
14	<code>scheme/foreign</code>	19
15	<code>scheme/function</code>	20
16	<code>scheme/future</code>	21

17	<code>scheme/generator</code>	22
18	<code>scheme/gui</code>	23
19	<code>scheme/gui/base</code>	24
20	<code>scheme/gui/dynamic</code>	25
21	<code>scheme/help</code>	26
22	<code>scheme/include</code>	27
23	<code>scheme/init</code>	28
24	<code>scheme/language-info</code>	29
25	<code>scheme/list</code>	30
26	<code>scheme/load</code>	31
27	<code>scheme/local</code>	32
28	<code>scheme/match</code>	33
29	<code>scheme/math</code>	34
30	<code>scheme/mpair</code>	35
31	<code>scheme/nest</code>	36
32	<code>scheme/package</code>	37
33	<code>scheme/path</code>	38

34	<code>scheme/port</code>	39
35	<code>scheme/pretty</code>	40
36	<code>scheme/promise</code>	41
37	<code>scheme/provide</code>	42
38	<code>scheme/provide-syntax</code>	43
39	<code>scheme/provide-transform</code>	44
40	<code>scheme/require</code>	45
41	<code>scheme/require-syntax</code>	46
42	<code>scheme/require-transform</code>	47
43	<code>scheme/runtime-config</code>	48
44	<code>scheme/runtime-path</code>	49
45	<code>scheme/sandbox</code>	50
46	<code>scheme/serialize</code>	51
47	<code>scheme/set</code>	52
48	<code>scheme/signature</code>	53
49	<code>scheme/shared</code>	54
50	<code>scheme/splicing</code>	55

51	<code>scheme/string</code>	56
52	<code>scheme/struct-info</code>	57
53	<code>scheme/stxparam</code>	58
54	<code>scheme/stxparam-exptime</code>	59
55	<code>scheme/surrogate</code>	60
56	<code>scheme/system</code>	61
57	<code>scheme/tcp</code>	62
58	<code>scheme/trait</code>	63
59	<code>scheme/udp</code>	64
60	<code>scheme/unit</code>	65
61	<code>scheme/unit-exptime</code>	66
62	<code>scheme/unsafe/ops</code>	67
63	<code>scheme/vector</code>	68
64	<code>mred</code>	69
65	Compatibility Executables	70

1 `scheme`

```
(require scheme)      package: scheme-lib
```

The `scheme` library re-exports `racket`, except based on `scheme/base` instead of `racket/base`, the `struct` and `struct/ctc` from `scheme/unit` is exported, `scheme/set` is not re-exported, `scheme/system` is not re-exported, `pretty-print` is re-directed in as `scheme/pretty`, and `scheme/nest` is re-exported.

2 `scheme/base`

```
(require scheme/base)      package: scheme-lib
```

The `scheme/base` library re-exports `racket/base`, except that `racket`'s `struct`, `hash`, `hasheq`, `hasheqv`, `in-directory`, and `local-require` are not exported, and `make-base-namespace`, `make-base-empty-namespace` `#!/module-begin` are different.

```
| (make-base-empty-namespace) → namespace?
```

Like `make-base-empty-namespace` from `racket/base`, but with `scheme/base` attached.

```
| (make-base-namespace) → namespace?
```

Like `make-base-namespace` from `racket/base`, but with `scheme/base` attached.

```
| (#!/module-begin form ...)
```

Like `#!/module-begin` from `racket/base`, but declares a `configure-runtime` submodule that uses `scheme/runtime-config` instead of `racket/runtime-config`, and it does not check for an immediate declaration of `configure-runtime` among the `forms`.

3 `scheme/async-channel`

```
(require scheme/async-channel)    package: scheme-lib
```

The `scheme/async-channel` library re-exports `racket/async-channel`.

4 `scheme/bool`

```
(require scheme/bool)      package: scheme-lib
```

The `scheme/bool` library re-exports `racket/bool`.

5 `scheme/class`

```
(require scheme/class)      package: scheme-lib
```

The `scheme/class` library re-exports `racket/class`, except that `writable<%>` is exported under the name `printable<%>` (and `printable<%>` from `racket/class` is not exported).

`printable<%>` : interface?

An alias for `writable<%>`.

6 `scheme/cmdline`

```
(require scheme/cmdline)      package: scheme-lib
```

The `scheme/cmdline` library re-exports `racket/cmdline`.

7 `scheme/contract`

```
(require scheme/contract)    package: scheme-lib
```

The `scheme/contract` library re-exports `racket/contract`.

8 `scheme/control`

```
(require scheme/control)      package: scheme-lib
```

The `scheme/control` library re-exports `racket/control`.

9 `scheme/date`

```
(require scheme/date)      package: scheme-lib
```

The `scheme/date` library re-exports `racket/date`.

10 `scheme/dict`

```
(require scheme/dict)      package: scheme-lib
```

The `scheme/dict` library re-exports `racket/dict`.

11 `scheme/file`

```
(require scheme/file)      package: scheme-lib
```

The `scheme/file` library re-exports `racket/file`.

12 `scheme/fixnum`

```
(require scheme/fixnum)      package: scheme-lib
```

The `scheme/fixnum` library re-exports `racket/fixnum`.

13 `scheme/flonum`

```
(require scheme/flonum)      package: scheme-lib
```

The `scheme/flonum` library re-exports `racket/flonum`.

14 `scheme/foreign`

```
(require scheme/foreign)      package: scheme-lib
```

The `scheme/foreign` library re-exports `ffi/unsafe`, `ffi/unsafe/cvector`, and `ffi/vector`, except that `unsafe!` must be used to import the unsafe bindings of `ffi/unsafe` and `ffi/unsafe/cvector`.

```
| (unsafe!)
```

Makes unsafe bindings available.

```
| (provide* provide-star-spec ...)  
| provide-star-spec = (unsafe id)  
|                   | (unsafe (rename-out [id external-id]))  
|                   | provide-spec
```

Like `provide`, but `ids` under `unsafe` are not actually provided. Instead, they are collected for introduction into an importing module via a macro created by `define-unsafes`.

```
| (define-unsafes id)
```

Cooperates with `provide*` to define `id` as a `unsafe!`-like form that introduces definitions for each binding provided as `unsafe`. The `define-unsafes` form must occur after all the `provide*` forms to which it refers.

15 `scheme/function`

```
(require scheme/function)    package: scheme-lib
```

The `scheme/function` library re-exports `racket/function`.

16 `scheme/future`

```
(require scheme/future)    package: scheme-lib
```

The `scheme/future` library re-exports `racket/future`.

17 `scheme/generator`

```
(require scheme/generator)    package: scheme-lib
```

The `scheme/generator` library re-exports `racket/generator`.

18 `scheme/gui`

```
(require scheme/gui)      package: gui-lib
```

The `scheme/gui` library re-exports `racket/gui`, except that it builds on `scheme/gui/base` instead of `racket/gui/base`.

19 `scheme/gui/base`

```
(require scheme/gui/base)    package: gui-lib
```

The `scheme/gui/base` library re-exports `racket/gui/base`, except that it builds on `scheme` instead of `racket`.

■ `(make-gui-empty-namespace)` → namespace?

Like `make-base-empty-namespace`, but with `scheme/class` and `scheme/gui/base` also attached to the result namespace.

■ `(make-gui-namespace)` → namespace?

Like `make-base-namespace`, but with `scheme/class` and `scheme/gui/base` also required into the top-level environment of the result namespace.

20 `scheme/gui/dynamic`

```
(require scheme/gui/dynamic)    package: scheme-lib
```

The `scheme/gui/dynamic` library re-exports `racket/gui/dynamic`, except that `gui-dynamic-require` extracts bindings from `mred` instead of `scheme/gui/base`.

```
(gui-dynamic-require sym) → any  
  sym : symbol?
```

Like `gui-dynamic-require` from `racket/gui/base`, but to access exports of `scheme/gui/base`.

21 `scheme/help`

```
(require scheme/help)      package: scheme-lib
```

The `scheme/help` library re-exports `racket/help`.

22 `scheme/include`

```
(require scheme/include)    package: scheme-lib
```

The `scheme/include` library re-exports `racket/include`.

23 `scheme/init`

```
(require scheme/init)      package: scheme-lib
```

The `scheme/init` library re-exports `racket/init`, except that it builds on `scheme` instead of `racket`.

24 `scheme/language-info`

```
(require scheme/language-info)    package: scheme-lib
```

The `scheme/language-info` library is like `racket/language-info`, except that it produces `'(#(scheme/runtime-config configure #f))` for the `'configure-runtime` information key.

See also `scheme/runtime-config`.

25 `scheme/list`

```
(require scheme/list)      package: scheme-lib
```

The `scheme/list` library re-exports `racket/list`.

26 `scheme/load`

```
(require scheme/load)      package: scheme-lib
```

The `scheme/load` library re-exports `racket/load`.

27 `scheme/local`

```
(require scheme/local)      package: scheme-lib
```

The `scheme/local` library re-exports `racket/local`.

28 `scheme/match`

```
(require scheme/match)      package: scheme-lib
```

The `scheme/match` library re-exports `racket/match`.

29 `scheme/math`

```
(require scheme/math)      package: scheme-lib
```

The `scheme/math` library re-exports `racket/math`.

30 `scheme/mpair`

```
(require scheme/mpair)      package: compatibility-lib
```

The `scheme/mpair` library re-exports `compatibility/mlist`.

31 `scheme/nest`

```
(require scheme/nest)      package: scheme-lib
```

```
| (nest ([datum ...+] ...) body ...+)
```

Combines nested expressions that syntactically drift to the right into a more linear textual format, much in the same way that `let*` linearizes a sequence of nested `let` expressions.

For example,

```
(nest ([let ([x 10]
            [y 6])]
      [with-handlers ([exn:fail? (lambda (x) 15)]]
      [parameterize ([current-output-port (current-error-port)]]
      [let-values ([[d r] (quotient/remainder x y)]]])
      (display (+ d r)))
```

is equivalent to

```
(let ([x 10]
      [y 6])
  (with-handlers ([exn:fail? (lambda (x) 15)]]
    (parameterize ([current-output-port (current-error-port)]]
      (let-values ([[d r] (quotient/remainder x y)]]
        (display (+ d r))))))
```

The `nest` form is unusual in that it has no semantics apart from its expansion, and its implementation is easier to understand than a precise prose description:

```
(define-syntax nest
  (syntax-rules ()
    [(nest () body0 body ...)
     (let () body0 body ...)]
    [(nest ([form forms ...]) body0 body ...)
     (form forms ... (let () body0 body ...))]
    [(nest ([form forms ...] . more) body0 body ...)
     (form forms ... (nest more body0 body ...))]))
```

32 `scheme/package`

```
(require scheme/package)      package: compatibility-lib
```

The `scheme/package` library re-exports `compatibility/package`.

33 `scheme/path`

```
(require scheme/path)      package: scheme-lib
```

The `scheme/path` library re-exports `racket/path`.

34 `scheme/port`

```
(require scheme/port)      package: scheme-lib
```

The `scheme/port` library re-exports `racket/port`.

35 `scheme/pretty`

```
(require scheme/pretty)      package: scheme-lib
```

The `scheme/pretty` library re-exports `racket/pretty`, except that `pretty-write` is exported under the name `pretty-print` (and `pretty-print` from `racket/pretty` is not exported).

```
(pretty-print v [port]) → void?  
  v : any/c  
  port : output-port? = (current-output-port)
```

An alias for `pretty-write`.

36 `scheme/promise`

```
(require scheme/promise)      package: scheme-lib
```

The `scheme/promise` library re-exports `racket/promise`.

37 `scheme/provide`

```
(require scheme/provide)    package: scheme-lib
```

The `scheme/provide` library re-exports `racket/provide`.

38 `scheme/provide-syntax`

```
(require scheme/provide-syntax)    package: scheme-lib
```

The `scheme/provide-syntax` library re-exports `racket/provide-syntax`.

39 `scheme/provide-transform`

```
(require scheme/provide-transform)    package: scheme-lib
```

The `scheme/provide-transform` library re-exports `racket/provide-transform`.

40 `scheme/require`

```
(require scheme/require)    package: scheme-lib
```

The `scheme/require` library re-exports `racket/require`.

41 `scheme/require-syntax`

```
(require scheme/require-syntax)    package: scheme-lib
```

The `scheme/require-syntax` library re-exports `racket/require-syntax`.

42 `scheme/require-transform`

```
(require scheme/require-transform)    package: scheme-lib
```

The `scheme/require-transform` library re-exports `racket/require-transform`.

43 `scheme/runtime-config`

```
(require scheme/runtime-config)    package: scheme-lib
```

The `scheme/runtime-config` library is like `racket/runtime-config`, except that its `configure` sets `print-as-expression` to `#f`.

44 `scheme/runtime-path`

```
(require scheme/runtime-path)    package: scheme-lib
```

The `scheme/runtime-path` library re-exports `racket/runtime-path`.

45 scheme/sandbox

```
(require scheme/sandbox)      package: sandbox-lib
```

The `scheme/sandbox` library re-exports `racket/sandbox`, except that `sandbox-namespace-specs`, `make-evaluator`, and `make-module-evaluator` are replaced.

```
(sandbox-namespace-specs) → (cons/c (-> namespace?)
                                   (listof module-path?))
(sandbox-namespace-specs spec) → void?
spec : (cons/c (-> namespace?)
             (listof module-path?))
```

Like `sandbox-namespace-specs` from `racket/sandbox`, but the default is `(list make-base-namespace)` if `gui?` is `#f`, `(list make-gui-namespace)` if `gui?` is `#t`.

```
(make-evaluator language
                input-program ...
                #:requires requires
                #:allow-read allow) → (any/c . -> . any)
language : (or/c module-path?
            (list/c 'special symbol?)
            (cons/c 'begin list?))
input-program : any/c
requires : (listof (or/c module-path? path?))
allow : (listof (or/c module-path? path?))
(make-module-evaluator module-decl
                       #:language lang
                       #:allow-read allow) → (any/c . -> . any)
module-decl : (or/c syntax? pair?)
lang : (or/c #f module-path?)
allow : (listof (or/c module-path? path?))
```

Like `make-evaluator` and `make-module-evaluator` from `racket/sandbox`, but the value of the `sandbox-namespace-specs` parameter is installed as the value of `sandbox-namespace-specs` from `racket/sandbox` before chaining to `make-evaluator` and `make-module-evaluator` from `racket/sandbox`.

46 `scheme/serialize`

```
(require scheme/serialize)      package: scheme-lib
```

The `scheme/serialize` library re-exports `racket/serialize`.

47 `scheme/set`

```
(require scheme/set)      package: scheme-lib
```

The `scheme/set` library re-exports `racket/set`.

48 `scheme/signature`

```
(require scheme/signature)    package: sandbox-lib
```

The `scheme/signature` library re-exports `racket/signature`.

49 `scheme/shared`

```
(require scheme/shared)    package: scheme-lib
```

The `scheme/shared` library re-exports `racket/shared`.

50 `scheme/splicing`

```
(require scheme/splicing)    package: scheme-lib
```

The `scheme/splicing` library re-exports `racket/splicing`.

51 `scheme/string`

```
(require scheme/string)      package: scheme-lib
```

The `scheme/string` library re-exports `racket/string`.

52 `scheme/struct-info`

```
(require scheme/struct-info)    package: scheme-lib
```

The `scheme/struct-info` library re-exports `racket/struct-info`.

53 `scheme/stxparam`

```
(require scheme/stxparam)      package: scheme-lib
```

The `scheme/stxparam` library re-exports `racket/stxparam`.

54 `scheme/stxparam-exptime`

```
(require scheme/stxparam-exptime)    package: scheme-lib
```

The `scheme/stxparam-exptime` library re-exports `racket/stxparam-exptime`.

55 `scheme/surrogate`

```
(require scheme/surrogate)      package: scheme-lib
```

The `scheme/surrogate` library re-exports `racket/surrogate`.

56 `scheme/system`

```
(require scheme/system)      package: scheme-lib
```

The `scheme/system` library re-exports `racket/system`.

57 `scheme/tcp`

```
(require scheme/tcp)      package: scheme-lib
```

The `scheme/tcp` library re-exports `racket/tcp`.

58 `scheme/trait`

```
(require scheme/trait)      package: scheme-lib
```

The `scheme/trait` library re-exports `racket/trait`.

59 `scheme/udp`

```
(require scheme/udp)      package: scheme-lib
```

The `scheme/udp` library re-exports `racket/udp`.

60 `scheme/unit`

```
(require scheme/unit)      package: scheme-lib
```

The `scheme/unit` library re-exports `racket/unit`, except that `struct` and `struct/ctc` are `struct~s` and `struct~s/ctc` from `mzlib/unit` instead of `struct` from `racket/base` and `struct/ctc` from `racket/unit`.

61 `scheme/unit-exptime`

```
(require scheme/unit-exptime)    package: scheme-lib
```

The `scheme/unit-exptime` library re-exports `racket/unit-exptime`.

62 `scheme/unsafe/ops`

```
(require scheme/unsafe/ops)      package: scheme-lib
```

The `scheme/unsafe/ops` library re-exports `racket/unsafe/ops`.

63 `scheme/vector`

```
(require scheme/vector)      package: scheme-lib
```

The `scheme/vector` library re-exports `racket/vector`.

64 mred

```
(require mred)      package: gui-lib
```

The `mred` library is like `scheme/gui/base`, except that it provides variants of `make-gui-namespace` and `make-gui-empty-namespace` that attach `mred` instead of `scheme/gui/base`.

Both `scheme/gui/base` and `racket/gui/base` depend on `mred`, so it is attached by all variants of `make-gui-empty-namespace`.

```
(require mred/mred)  package: gui-lib
```

The `mred` library actually just re-exports `mred/mred`, which is an even older name for the library.

65 Compatibility Executables

The following executables are included in the Racket distribution for compatibility with older versions of Racket:

- `mzscheme` — the same as `racket -I scheme/init`
- `mred` — the same as `gracket -I scheme/gui/init`
- `drscheme` — the same as `drracket`
- `mzc` — an old interface to some of the tools provided by `raco`, including `raco make` and `raco ctool`; use `mzc --help` for more information
- `plt-help` — the same as `raco docs`