

# timezones: Time Zones

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## Description

Information about time zones in R. `Sys.timezone` returns the name of the current time zone.

## Usage

```
1 Sys.timezone(location = TRUE)
2
3 OlsonNames(tzdir = NULL)
```

## Arguments

<code>location</code>	logical: defunct: ignored, with a warning for false values.
<code>tzdir</code>	The time-zone database to be used: the default is to try known locations until one is found.

## Details

Time zones are a system-specific topic, but these days almost all R platforms use similar underlying code, used by Linux, macOS, Solaris, AIX and FreeBSD, and installed with R on Windows. (Unfortunately there are many system-specific errors in the implementations.) It is possible to use the R sources' version of the code on Unix-alikes as well as on Windows: this is the default for macOS and recommended for Solaris.

It should be possible to set the current time zone via the environment variable TZ: see the section on 'Time zone names' for suitable values.

`Sys.timezone()` will return the value of TZ if set initially (and on some OSes

## base

**abbreviate:** Abbreviate Strings

**agrep:** Approximate String Matching (Fuzzy Matching)

**all:** Are All Values True?

**all.equal:** Test if Two Objects are (Nearly) Equal

**allnames:** Find All Names in an Expression

**any:** Are Some Values True?

**aperm:** Array Transposition

**append:** Vector Merging

**apply:** Apply Functions Over Array Margins

**args:** Argument List of a Function

**Arithmetic:** Arithmetic Operators

**array:** Multi-way Arrays

**as.data.frame:** Coerce to a Data Frame

**as.Date:** Date Conversion Functions to and from Character

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'try' does not get this right, it should be set before the R process is started or (probably early enough) in file `.Rprofile` ).

If TZ is set but invalid, most platforms default to UTC, the time zone colloquially known as GMT (see [https://en.wikipedia.org/wiki/Coordinated\\_Universal\\_Time](https://en.wikipedia.org/wiki/Coordinated_Universal_Time)). (Some but not all platforms will give a warning for invalid values.) If it is unset or empty the system time zone is used (the one returned by `Sys.timezone` ).

Time zones did not come into use until the second half of the nineteenth century and were not widely adopted until the twentieth, and *daylight saving time* (DST, also known as *summer time*) was first introduced in the early twentieth century, most widely in 1916. Over the last 100 years places have changed their affiliation between major time zones, have opted out of (or in to) DST in various years or adopted DST rule changes late or not at all. (The UK experimented with DST throughout 1971, only.)

A quite common system implementation of `POSIXct` is as signed 32-bit integers and so only goes back to the end of 1901: on such systems R assumes that dates prior to that are in the same time zone as they were in 1902. Most of the world had not adopted time zones by 1902 (so used local 'mean time' based on longitude) but for a few places there had been time-zone changes before then. 64-bit representations are becoming common; unfortunately on some 64-bit OSes (notably macOS) the database information is 32-bit and so only available for the range 1901–2038, and incompletely for the end years.

As from R 3.5.0, when a time zone location is first found in a session, its value is cached in object `.sys.timezone` in the base environment.

## Value

`Sys.timezone` returns an OS-specific character string, possibly `NA` or an empty string (which on some OSes means UTC). This will be a location such as "Europe/London" if one can be ascertained.

A time zone region may be known by several names: for example "Europe/London" is also known as GB, GB-Eire, Europe/Belfast, Europe/Guernsey, Europe/Isle\_of\_Man and Europe/Jersey. A few regions are also known by a summary of their time zone, e.g. PST8PDT is an alias for America/Los\_Angeles.

`OlsonNames` returns a character vector, see the examples for typical cases. It may have an attribute "Version", something like "2017c".

## Time zone names

**as.function:** Convert Object to Function

**AsIs:** Inhibit Interpretation/Conversion of Objects

**asplit:** Split Array/Matrix By Its Margins

**as.POSIXlt:** Date-time Conversion Functions

**assign:** Assign a Value to a Name

**assignOps:** Assignment Operators

**attach:** Attach Set of R Objects to Search Path

**attr:** Object Attributes

**attributes:** Object Attribute Lists

**autoload:** On-demand Loading of Packages

**backsolve:** Solve an Upper or Lower Triangular System

**base-defunct:** Defunct Functions in Package 'base'

**base-deprecated:** Deprecated Functions in Package 'base'

**base-internal:** Internal Objects in Package 'base'

**basename:** Manipulate File Paths

**base-package:** The R Base Package

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cumbersome POSIX specification (listed under environment variable TZ at [http://pubs.opengroup.org/onlinepubs/9699919799/basedefs/V1\\_chap08.html#tag\\_15\\_107](http://pubs.opengroup.org/onlinepubs/9699919799/basedefs/V1_chap08.html#tag_15_107)) which is often at least partially supported, but there are other more user-friendly ways to specify time zones.

Almost all R platforms make use of a time-zone database originally compiled by Arthur David Olson and now managed by IANA, in which the preferred way to refer to a time zone is by a location (typically of a city), e.g., [Europe/London](#), [America/Los\\_Angeles](#), [Pacific/Easter](#) within a ‘time zone region’. Some traditional designations are also allowed such as [EST5EDT](#) or [GB](#). (Beware that some of these designations may not be what you expect: in particular [EST](#) is a time zone used in Canada *without* daylight saving time, and not [EST5EDT](#) nor (Australian) Eastern Standard Time.) The designation can also be an optional colon prepended to the path to a file giving complied zone information (and the examples above are all files in a system-specific location). See <https://data.iana.org/time-zones/tz-link.html> for more details and references. By convention, regions with a unique time-zone history since 1970 have specific names in the database, but those with different earlier histories may not. Each time zone has one or two (the second for DST) abbreviations used when formatting times.

The abbreviations used have changed over the years: for example France used PMT (‘Paris Mean Time’) from 1891 to 1911 then WET/WEST up to 1940 and CET/CEST from 1946. (In almost all time zones the abbreviations have been stable since 1970.) The POSIX standard allows only one or two abbreviations per time zone, so you may see the current abbreviation(s) used for older times.

For some time zones abbreviations are like -03 and +0845: this is done when there is no official abbreviation. (Negative values are behind (West of) UTC, as for the “%z” format for [strftime](#).)

The function [OlsonNames](#) returns the time-zone names known to the currently selected Olson/IANA database. The system-specific location in the file system varies, e.g. ‘/usr/share/zoneinfo’ (Linux, macOS, FreeBSD), ‘/usr/share/lib/zoneinfo’ (Solaris, AIX), .... It is likely that there is a file named something like ‘zone.tab’ under that directory listing the locations known as time-zone names (but not for example [EST5EDT](#)). See also <https://en.wikipedia.org/wiki/Zone.tab>.

Where R was configured with option --with-internal-tzcode (the default on macOS and Windows: recommended on Solaris), the database at [file.path\(R.home\("share"\), "zoneinfo"\)](#) is used by default: file ‘VERSION’ in that directory states the version. Environment variable TZDIR can be used to point to a different ‘zoneinfo’ database: this is also supported by the native services on some OSes, e.g. Linux using [glibc](#) except in secure modes.

Time zones given by name (via environment variable TZ, in [tz](#) arguments to

**bincode**: Bin a Numeric Vector

**bindenv**: Binding and Environment Locking, Active Bindings

**bitwise**: Bitwise Logical Operations

**body**: Access to and Manipulation of the Body of a Function

**bquote**: Partial substitution in expressions

**browser**: Environment Browser

**browserText**: Functions to Retrieve Values Supplied by Calls to the Browser

**builtins**: Returns the Names of All Built-in Objects

**by**: Apply a Function to a Data Frame Split by Factors

**c**: Combine Values into a Vector or List

**call**: Function Calls

**callCC**: Call With Current Continuation

**CallExternal**: Modern Interfaces to C/C++ code

**capabilities**: Report Capabilities of this Build of R

**cat**: Concatenate and Print

**cbind**: Combine R Objects by Rows or Columns

(hence no DST). Contrary to some expectations (but consistent with names such as PST8PDT), negative offsets are times ahead of (east of) UTC, positive offsets are times behind (west of) UTC.

Immediately prior to the advent of legislated time zones, most people used time based on their longitude (or that of a nearby town), known as ‘Local Mean Time’ and abbreviated as LMT in the databases: in many countries that was codified with a specific name before the switch to a standard time. For example, Paris codified its LMT as ‘Paris Mean Time’ in 1891 (to be used throughout mainland France) and switched to GMT+0 in 1911.

Some systems (notably Linux) have a `tzselect` command which allows the interactive selection of a supported time zone name. On systems using `systemd` (notably Linux), the OS command `timedatectl list-timezones` will list all available time zone names.

## Warning

There is a system-specific upper limit on the number of bytes in (abbreviated) time-zone names which can be as low as 6 (as required by POSIX). Some OSes allow the setting of time zones with names which exceed their limit, and that can crash the R session.

`OlsonNames` tries to find an Olson database in known locations. It might not succeed (when it returns an empty vector with a warning) and even if it does it might not locate the database used by the date-time code linked into R. Fortunately names are added rarely and most databases are pretty complete.

## How the system time zone is found

This section is of background interest for users of a Unix-alike, but may help if an `NA` value is returned unexpectedly.

Commercial Unixen such as Solaris and AIX set TZ, so the value when R is started is used.

All other common platforms (Linux, macOS, \*BSD) use similar schemes, either derived from `tzcode` (currently distributed from <https://www.iana.org/time-zones>) or independently coded (`glibc`, `musl-libc`). Such systems read the time-zone information from a file ‘localtime’, usually under ‘/etc’ (but possibly under ‘/usr/local/etc’ or ‘/usr/local/etc/zoneinfo’). As the usual Linux manual page for `localtime` says

‘Because the time zone identifier is extracted from the symlink target name of ‘/etc/localtime’, this file may not be a normal file or hardlink.’

Nevertheless, some Linux distributions (including the one from which that ~~auto was taken~~ or sysadmins have chosen to copy a time-zone file to

**char.expand:** Expand a String with Respect to a Target Table

**charmatch:** Partial String Matching

**chartr:** Character Translation and Casing

**chkDots:** Warn About Extraneous Arguments in the “...” of Its Caller

**chol:** The Choleski Decomposition

**chol2inv:** Inverse from Choleski (or QR) Decomposition

**class:** Object Classes

**col:** Column Indexes

**colnames:** Row and Column Names

**Colon:** Colon Operator

**colSums:** Form Row and Column Sums and Means

**commandArgs:** Extract Command Line Arguments

**comment:** Query or Set a “comment” Attribute

**Comparison:** Relational Operators

**complex:** Complex Numbers and Basic Functionality

**conditions:** Condition Handling and Recovery

Some Linux platforms provide two other mechanisms which are tried in turn before looking at '/etc/localtime'.

- 'Modern' Linux systems use `systemd` which provides mechanisms to set and retrieve the time zone (amongst other things). There is a command `timedatectl` to give details. (Unfortunately RHEL/Centos 6.x are not 'modern'.)
- Debian-derived systems since ca 2007 have supplied a file '/etc/timezone'. Its format is undocumented but it empirically it contains a single line of text naming the time zone.

In each case a sanity check is performed that the time-zone name is the name of a file in the time-zone database. (The systems probably use the time-zone file (symlinked to) '/etc/localtime', but the `Sys.timezone` code does not check that is the same as the named file in the database. This is deliberate as they may be from different dates.)

## Note

Since 2007 there has been considerable disruption over changes to the timings of the DST transitions, aimed at energy conservation. These often have short notice and time-zone databases may not be up to date. (Morocco in 2013 announced a change to the end of DST at a days notice, and in 2015 North Korea gave imprecise information about a change a week in advance.)

On platforms with case-insensitive file systems, time zone names will be case-insensitive. They may or may not be on other platforms and so, for example, "`gmt`" is valid on some platforms and not on others.

Note that except where replaced, the operation of time zones is an OS service, and even where replaced a third-party database is used and can be updated (see the section on 'Time zone names'). Incorrect results will never be an R issue, so please ensure that you have the courtesy not to blame R for them.

## See Also

`Sys.time`, `as.POSIXlt`.

[https://en.wikipedia.org/wiki/Time\\_zone](https://en.wikipedia.org/wiki/Time_zone) and <https://data.iana.org/time-zones/tz-link.html> for extensive sets of links.

<https://data.iana.org/time-zones/theory.html> for the 'rules' of the Olson/IANA database.

## Examples

### Search Path

**connections**: Functions to Manipulate Connections (Files, URLs, ...)

**Constants**: Built-in Constants

**contributors**: R Project Contributors

**Control**: Control Flow

**copyright**: Copyrights of Files Used to Build R

**crossprod**: Matrix Crossproduct

**Cstack\_info**: Report Information on C Stack Size and Usage

**cumsum**: Cumulative Sums, Products, and Extremes

**curlGetHeaders**: Retrieve Headers from URLs

**cut**: Convert Numeric to Factor

**cut.POSIXt**: Convert a Date or Date-Time Object to a Factor

**data.class**: Object Classes

**data.frame**: Data Frames

**dataframeHelpers**: Data Frame Auxiliary Functions

**data.matrix**: Convert a Data Frame to a Numeric Matrix

**data**: System Data and

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```

3 str(OlsonNames()) ## typically close to 600 hundred names,
4 ## typically some acronyms/aliases such as "UTC", "NZ", "MET", '
5 ## mostly pairs (and triplets) such as "Pacific/Auckland"
6 table(sl <- grepl("/", OlsonNames()))
7 OlsonNames()[ !sl ] # the simple ones
8 head(Osl <- strsplit(OlsonNames()[sl], "/"))
9 (tOS1 <- table(vapply(Osl, `[[[`, "", 1)))) # Continents, countries
10 table(lengths(Osl))# most are pairs, some triplets
11 str(Osl[lengths(Osl) >= 3])# "America" South and North ...

```

[Run this example](#)[Create a free Jupyter Notebook](#)[Embed on your website](#)**DateTimeClasses:** Date-Time Classes**dcf:** Read and Write Data in DCF Format**debug:** Debug a Function**Defunct:** Marking Objects as Defunct**delayedAssign:** Delay Evaluation**deparse:** Expression Deparsing**deparseOpts:** Options for Expression Deparsing**Deprecated:** Marking Objects as Deprecated**det:** Calculate the Determinant of a Matrix**detach:** Detach Objects from the Search Path**dev:** Lists of Open/Active Graphics Devices**diag:** Matrix Diagonals**diff:** Lagged Differences**difftime:** Time Intervals / Differences**dim:** Dimensions of an Object**dimnames:** Dimnames of an Object**do.call:** Execute a Function Call**dontCheck:** Identity

**double**: Double-Precision Vectors

**dput**: Write an Object to a File or Recreate it

**drop**: Drop Redundant Extent Information

**droplevels**: Drop Unused Levels from Factors

**dump**: Text Representations of R Objects

**duplicated**: Determine Duplicate Elements

**dynload**: Foreign Function Interface

**eapply**: Apply a Function Over Values in an Environment

**eigen**: Spectral Decomposition of a Matrix

**encodeString**: Encode Character Vector as for Printing

**Encoding**: Read or Set the Declared Encodings for a Character Vector

**environment**: Environment Access

**EnvVar**: Environment Variables

**eval**: Evaluate an (Unevaluated) Expression

**exists**: Is an Object Defined?

**expression:** Unevaluated Expressions

**Extract:** Extract or Replace Parts of an Object

**Extract.data.frame:** Extract or Replace Parts of a Data Frame

**Extract.factor:** Extract or Replace Parts of a Factor

**Extremes:** Maxima and Minima

**extSoftVersion:** Report Versions of Third-Party Software

**factor:** Factors

**file.access:** Ascertain File Accessibility

**file.choose:** Choose a File Interactively

**file.info:** Extract File Information

**file.path:** Construct Path to File

**files:** File Manipulation

**files2:** Manipulation of Directories and File Permissions

**file.show:** Display One or More Text Files

**findInterval:** Find Interval Numbers or Indices

**find.package:** Find Packages

**force:** Force Evaluation of

## Arguments Forced

**Foreign:** Foreign Function Interface

**Foreign-internal:** Internal Versions of the Foreign Function Interface

**formals:** Access to and Manipulation of the Formal Arguments

**format:** Encode in a Common Format

**formatc:** Formatting Using C-style Formats

**formatDL:** Format Description Lists

**format.info:** format(.) Information

**format.pval:** Format P Values

**function:** Function Definition

**funprog:** Common Higher-Order Functions in Functional Programming...

**gc:** Garbage Collection

**gc.time:** Report Time Spent in Garbage Collection

**gctorture:** Torture Garbage Collector

**get:** Return the Value of a Named Object

**getCallingDLL:** Compute DLL for Native Interface Call

**getLoadedDLLs**: Get DLLs Loaded in Current Session

**getNativeSymbolInfo**: Obtain a Description of one or more Native (C/Fortran)...

**gettext**: Translate Text Messages

**getwd**: Get or Set Working Directory

**gl**: Generate Factor Levels

**grep**: Pattern Matching and Replacement

**grepRaw**: Pattern Matching for Raw Vectors

**groupGeneric**: S3 Group Generic Functions

**grouping**: Grouping Permutation

**gzcon**: (De)compress I/O Through Connections

**hexmode**: Display Numbers in Hexadecimal

**Hyperbolic**: Hyperbolic Functions

**iconv**: Convert Character Vector between Encodings

**icuSetCollate**: Setup Collation by ICU

**identical**: Test Objects for Exact Equality

**identity**: Identity Function

**ifelse**: Conditional Element Selection

**interaction:** Compute Factor Interactions

**interactive:** Is R Running Interactively?

**internal:** Call an Internal Function

**internalMethods:** Internal Generic Functions

**invisible:** Change the Print Mode to Invisible

**is.finite:** Finite, Infinite and NaN Numbers

**is.function:** Is an Object of Type (Primitive) Function?

**is.language:** Is an Object a Language Object?

**is.object:** Is an Object 'internally classed'?

**ISOdatetime:** Date-time Conversion Functions from Numeric Representations

**isR:** Are we using R, rather than S?

**is.recursive:** Is an Object Atomic or Recursive?

**isS4:** Test for an S4 object

**is.single:** Is an Object of Single Precision Type?

**isSymmetric:** Test if a Matrix or other Object is Symmetric (Hermitian)

**is.unsorted:** Test if an Object is Not Sorted

**litter:** 'litter' (Add Noise) to

## Number of a Matrix

**kronecker**: Kronecker Products on Arrays

**l10n\_info**: Localization Information

**labels**: Find Labels from Object

**La\_library**: LAPACK Library

**lapply**: Apply a Function over a List or Vector

**Last.value**: Value of Last Evaluated Expression

**La\_version**: LAPACK Version

**lazyload**: Lazy Load a Database of R Objects

**length**: Length of an Object

**lengths**: Lengths of List or Vector Elements

**levels**: Levels Attributes

**libcurlVersion**: Report Version of libcurl

**libPaths**: Search Paths for Packages

**library**: Loading/Attaching and Listing of Packages

**library.dynam**: Loading DLLs from Packages

**license**: The R License Terms

**list**: Lists - Generic and

## Environment

**list.files:** List the Files in a Directory/Folder

**load:** Reload Saved Datasets

**locales:** Query or Set Aspects of the Locale

**Log:** Logarithms and Exponentials

**Logic:** Logical Operators

**logical:** Logical Vectors

**LongVectors:** Long Vectors

**lower.tri:** Lower and Upper Triangular Part of a Matrix

**ls:** List Objects

**make.names:** Make Syntactically Valid Names

**make.unique:** Make Character Strings Unique

**mapply:** Apply a Function to Multiple List or Vector Arguments

**margin.table:** Compute table margin

**match:** Value Matching

**match.arg:** Argument Verification Using Partial Matching

**match.call:** Argument Matching

**match.fun:** Extract a Function Specified by

**matmult**: Matrix Multiplication

**mat.or.vec**: Create a Matrix or a Vector

**matrix**: Matrices

**maxCol**: Find Maximum Position in Matrix

**mean**: Arithmetic Mean

**memCompress**: In-memory Compression and Decompression

**memlimits**: Query and Set Heap Size Limits

**Memory**: Memory Available for Data Storage

**Memory-limits**: Memory Limits in R

**memory.profile**: Profile the Usage of Cons Cells

**merge**: Merge Two Data Frames

**message**: Diagnostic Messages

**missing**: Does a Formal Argument have a Value?

**mode**: The (Storage) Mode of an Object

**NA**: 'Not Available' / Missing Values

**name**: Names and Symbols

**names**: The Names of an Object

**nchar:** Count the Number of Characters (or Bytes or Width)

**nlevels:** The Number of Levels of a Factor

**noquote:** Class for 'no quote' Printing of Character Strings

**norm:** Compute the Norm of a Matrix

**normalizePath:** Express File Paths in Canonical Form

**notyet:** Not Yet Implemented Functions and Unused Arguments

**nrow:** The Number of Rows/Columns of an Array

**ns-dblcolon:** Double Colon and Triple Colon Operators

**ns-hooks:** Hooks for Namespace Events

**ns-internal:** Namespace Internals

**ns-load:** Loading and Unloading Name Spaces

**ns-reflect:** Namespace Reflection Support

**ns-topenv:** Top Level Environment

**NULL:** The Null Object

**numeric:** Numeric Vectors

**NumericConstants:**  
Numerics Constants

**octmode**: Display Numbers in Octal

**on.exit**: Function Exit Code

**Ops.Date**: Operators on the Date Class

**options**: Options Settings

**order**: Ordering Permutation

**outer**: Outer Product of Arrays

**Paren**: Parentheses and Braces

**parse**: Parse R Expressions

**paste**: Concatenate Strings

**path.expand**: Expand File Paths

**pcre\_config**: Report Configuration Options for PCRE

**Platform**: Platform Specific Variables

**pmatch**: Partial String Matching

**polyroot**: Find Zeros of a Real or Complex Polynomial

**pos.to.env**: Convert Positions in the Search Path to Environments

**pretty**: Pretty Breakpoints

**print.dataframe:** Printing Data Frames

**print.default:** Default Printing

**prmatrix:** Print Matrices, Old-style

**proc.time:** Running Time of R

**prod:** Product of Vector Elements

**prop.table:** Express Table Entries as Fraction of Marginal Table

**pushBack:** Push Text Back on to a Connection

**qr:** The QR Decomposition of a Matrix

**qraux:** Reconstruct the Q, R, or X Matrices from a QR Object

**quit:** Terminate an R Session

**Quotes:** Quotes

**Random:** Random Number Generation

**Random-user:** User-supplied Random Number Generation

**range:** Range of Values

**rank:** Sample Ranks

**rapply:** Recursively Apply a Function to a List

**raw:** Raw Vectors

**rawConversion**: Convert to or from Raw Vectors

**RdUtils**: Utilities for Processing Rd Files

**readBin**: Transfer Binary Data To and From Connections

**readChar**: Transfer Character Strings To and From Connections

**readline**: Read a Line from the Terminal

**readLines**: Read Text Lines from a Connection

**readRDS**: Serialization Interface for Single Objects

**readRenviron**: Set Environment Variables from a File

**Recall**: Recursive Calling

**regex**: Regular Expressions as used in R

**reg.finalizer**: Finalization of Objects

**regmatches**: Extract or Replace Matched Substrings

**rep**: Replicate Elements of Vectors and Lists

**replace**: Replace Values in a Vector

**Reserved**: Reserved Words in R

**rev**: Reverse Elements

**rle:** Run Length Encoding

**rm:** Remove Objects from a Specified Environment

**Round:** Rounding of Numbers

**round.POSIXt:** Round / Truncate Data-Time Objects

**row:** Row Indexes

**row.names:** Get and Set Row Names for Data Frames

**rowsum:** Give Column Sums of a Matrix or Data Frame, Based on a...

**sample:** Random Samples and Permutations

**save:** Save R Objects

**scale:** Scaling and Centering of Matrix-like Objects

**scan:** Read Data Values

**search:** Give Search Path for R Objects

**seek:** Functions to Reposition Connections

**seq:** Sequence Generation

**seq.Date:** Generate Regular Sequences of Dates

**seq.POSIXt:** Generate Regular Sequences of Times

**Serialization Interface****sets**: Set Operations**setTimeLimit**: Set CPU and/or Elapsed Time Limits**showConnections**: Display Connections**shQuote**: Quote Strings for Use in OS Shells**sign**: Sign Function**sink**: Send R Output to a File**slice.index**: Slice Indexes in an Array**slotOp**: Extract or Replace A Slot**socketSelect**: Wait on Socket Connections**solve**: Solve a System of Equations**sort**: Sorting or Ordering Vectors**source**: Read R Code from a File, a Connection or Expressions**Special**: Special Functions of Mathematics**split**: Divide into Groups and Reassemble**sprintf**: Use C-style String Formatting Commands**sQuote**: Quote Text**srcfile**: References to Source Files and Code

## Dispatching S4 Methods

**startsWith:** Does String Start or End With Another String?

**Startup:** Initialization at Start of an R Session

**stop:** Stop Function Execution

**stopifnot:** Ensure the Truth of R Expressions

**strptime:** Date-time Conversion Functions to and from Character

**strrep:** Repeat the Elements of a Character Vector

**strsplit:** Split the Elements of a Character Vector

**strtoi:** Convert Strings to Integers

**strtrim:** Trim Character Strings to Specified Display Widths

**structure:** Attribute Specification

**strwrap:** Wrap Character Strings to Format Paragraphs

**subset:** Subsetting Vectors, Matrices and Data Frames

**substitute:** Substituting and Quoting Expressions

**substr:** Substrings of a Character Vector

**sum:** Sum of Vector

**svd**: Singular Value Decomposition of a Matrix

**sweep**: Sweep out Array Summaries

**switch**: Select One of a List of Alternatives

**Syntax**: Operator Syntax and Precedence

**Sys.getenv**: Get Environment Variables

**Sys.getpid**: Get the Process ID of the R Session

**Sys.glob**: Wildcard Expansion on File Paths

**Sys.info**: Extract System and User Information

**Sys.localeconv**: Find Details of the Numerical and Monetary Representations in...

**sys.parent**: Functions to Access the Function Call Stack

**Sys.readlink**: Read File Symbolic Links

**Sys.setenv**: Set or Unset Environment Variables

**Sys.setTime**: Set File Time

**Sys.sleep**: Suspend Execution for a Time Interval

**sys.source**: Parse and Evaluate Expressions from a File

**system2:** Invoke a System Command

**system.file:** Find Names of R System Files

**system.time:** CPU Time Used

**Sys.time:** Get Current Date and Time

**Sys.which:** Find Full Paths to Executables

**t:** Matrix Transpose

**table:** Cross Tabulation and Table Creation

**tabulate:** Tabulation for Vectors

**tapply:** Apply a Function Over a Ragged Array

**taskCallback:** Add or Remove a Top-Level Task Callback

**taskCallbackManager:** Create an R-level Task Callback Manager

**taskCallbackNames:** Query the Names of the Current Internal Top-Level Task...

**tempfile:** Create Names for Temporary Files

**textconnections:** Text Connections

**tilde:** Tilde Operator

**timezones:** Time Zones

**trace**: Interactive Tracing and Debugging of Calls to a Function or...

**traceback**: Get and Print Call Stacks

**tracemem**: Trace Copying of Objects

**transform**: Transform an Object, for Example a Data Frame

**Trig**: Trigonometric Functions

**trimws**: Remove Leading/Trailing Whitespace

**try**: Try an Expression Allowing Error Recovery

**typeof**: The Type of an Object

**unique**: Extract Unique Elements

**unix/Signals**: Interrupting Execution of R

**unlink**: Delete Files and Directories

**unlist**: Flatten Lists

**uname**: Remove 'names' or 'dimnames'

**UseMethod**: Class Methods

**userhooks**: Functions to Get and Set Hooks for Load, Attach, Detach and...

**utf8Conversion**: Convert Integer Vectors to or from ~~UTF-8 encoded~~

Encoded

**vector**: Vectors

**Vectorize**: Vectorize a Scalar Function

**Version**: Version Information

**warning**: Warning Messages

**warnings**: Print Warning Messages

**weekday.POSIXt**: Extract Parts of a POSIXt or Date Object

**which**: Which indices are TRUE?

**which.min**: Where is the Min() or Max() or first TRUE or FALSE ?

**windows/shell**: Invoke a System Command, using a Shell

**windows/shell.exec**: Open a File or URL using Windows File Associations

**with**: Evaluate an Expression in a Data Environment

**withVisible**: Return both a Value and its Visibility

**write**: Write Data to a File

**writeLines**: Write Lines to a Connection

**xtfrm**: Auxiliary Function for Sorting and Ranking

znormall: Bounding of

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Characteristics of the Machine

**zpackages:** Listing of Packages

**zScript:** Scripting Language Interface

**zutils:** Miscellaneous Internal/Programming Utilities

## R Package Documentation

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## We want your feedback!

Note that we can't provide technical support on individual packages. You should contact the package authors for that.

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