

Spotfire® Enterprise Runtime for R Release Notes

Software Release 6.1.4

Contents

Spotfire Enterprise Runtime for R Release Notes.....	3
New Features.....	3
Changes in Functionality, Features, and Compatibility.....	4
Deprecated and Removed Features.....	4
Third Party Software Updates.....	5
Package Compatibility.....	5
Update or Reinstall a Version of TERR.....	8
Closed Issues.....	8
Known Issues.....	9
Spotfire Documentation and Support Services.....	12
Legal and Third-Party Notices.....	13

Spotfire Enterprise Runtime for R Release Notes

The Release Notes for this product version are provided to inform you of new features, known issues, and issues from previous releases that have been closed.

These release notes are for Spotfire® Enterprise Runtime for R (a/k/a TERR™) version 6.1 (LTS). They cover Linux® and Microsoft Windows® installations.



As of version 6.0.3, support for using TERR on macOS is removed.

TERR™ is a high-performance statistical engine, which is compatible with open-source R. It can be embedded into a wide range of applications as an enterprise-grade alternative to open-source R, and can run a wide array of packages from CRAN.



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New Features

Version 6.1 of Spotfire® Enterprise Runtime for R (a/k/a TERR™) contains the following new features.

Version 6.1.4

Version 6.1.4 of TERR™ has no new features.

Version 6.1.3

Version 6.1.3 of TERR™ has no new features.

Version 6.1.2

Version 6.1.2 of TERR™ has no new features.

Version 6.1.1

KEY	Description
TERR-7987	TERR is supported to run on Ubuntu 22.04. See the System Requirements for more information.
TERR-7992	TERR is supported to run on Red Hat Enterprise Linux (RHEL) 9. See the System Requirements for more information.

Version 6.1.0

In version 6.1.0, the product is renamed from TIBCO® Enterprise Runtime for R to Spotfire® Enterprise Runtime for R (a/k/a TERR).

- Documentation, file paths, and product information reflect the new name.
- Programming and internal elements, such as library names, extension function names, and function names, retain the old names for backward compatibility.

Changes in Functionality, Features, and Compatibility

Version 6.1 of TERR contains no changes in functionality.

Deprecated and Removed Features

Version 6.1 of TERR has deprecated or removed the following features.

TERR 6.1.4

Deprecated

Version 6.1.4 of TERR has no deprecated features.

Removed

Version 6.1.4 of TERR has no removed features.

TERR 6.1.3

Deprecated

Version 6.1.3 of TERR has no deprecated features.

Removed

Version 6.1.3 of TERR has no removed features.

TERR 6.1.2

Deprecated

Version 6.1.2 of TERR has no deprecated features.

Removed

Version 6.1.2 of TERR has no removed features.

TERR 6.1.1

Deprecated

Version 6.1.1 of TERR has no deprecated features.

Removed

Version 6.1.1 of TERR has no removed features.

TERR 6.1.0

Deprecated

Version 6.1.0 of TERR has no deprecated features.

Removed

- RHEL 7 is no longer a supported operating system for TERR.
- Debian 10 is no longer a supported operating system for TERR.

Third Party Software Updates

Version 6.1 of TERR contains the following third-party software updates.

Key	Version	Summary
TERR-8084	6.1.4	<ul style="list-style-type: none"> libarchive updated to 3.7.4 cURL updated to 8.9.1 OpenSSL updated to 3.0.14
TERR-8062	6.1.3	<ul style="list-style-type: none"> cURL updated to 8.7.1 libxml2 updated to 2.12.6 Olson timezone database updated to 2024a Applied mitigations to unzip for CVE-2015-7696, CVE-2015-7697, CVE-2016-9844, and CVE-2018-18384
TERR-8058	6.1.2	<ul style="list-style-type: none"> cURL updated to 8.5.0
TERR-8052	6.1.1	<ul style="list-style-type: none"> cURL updated to 8.4.0 libarchive (bsdtar) updated to 3.7.2 libxml2 updated to 2.11.6 OpenSSL updated to 3.0.12
TERR-8013	6.1.0	<ul style="list-style-type: none"> cURL updated to 8.2.1 OpenSSL updated to 3.0.10

Package Compatibility

We have reported the results of tests of CRAN packages using TERR in visualizations that are available on TIBCO™ Cloud® Spotfire at the following links. You can browse and review the results for the packages you want to use and their Task Views. You can review the results run for every expression in every help file for every CRAN package or BioConductor package for the following platforms.

Beginning with release 5.1, we also run all help examples provided in packages in the Bioconductor (BIOC) list.

To see a complete listing of the Rapi C API functions implemented in TERR, run the following code.



```
library(terrUtils)
implementedRapiEntries()
```

Package compatibility analysis in Spotfire

We reported the results of tests of CRAN packages using TERR 6.0 in visualizations that are available on TIBCO™ Cloud® Spotfire at the following links. You can browse and review the results for the

packages you want to use and their Task Views. You can review the results run for every expression in every help file for every CRAN package or BioConductor package for the following platforms.

CRAN packages	BioConductor packages
Windows	Windows
Linux	Linux

The tests run against code examples in the help provide some guidance for determining rates of success. The accuracy of information collected depends on the number and quality of examples in the package reference topics. These analyses are not meant to be the definitive determination of exact compatibility.

For more information about CRAN packages, see <https://cran.r-project.org/web/packages/>

- For more information about BioConductor packages, see <https://www.bioconductor.org/packages/release/bioc/>



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Package compatibility summary in TERR

Alternatively, we provide a summary of our testing results on the documentation site in the following CSV-formatted files.

- [CRANonTERR-Linux.csv](#)
- [CRANonTERR-Win.csv](#)
- [BIOConTERR-Linux.csv](#)
- [BIOConTERR-Win.csv](#)

TERR console code example for CRAN

You can use the TERR console to quickly access a summary of the information. The following example returns the results for testing the help files for the CRAN package caret. You can change the example to match the platform and package of your choice.

1. Change the CSV file name to match the platform (Linux or Windows).
2. Remove the comment markers for the CSV file name.
3. Provide the name of the package you want to query.

```
# Example: CRAN tests compatibility with this version of TERR
#
#packageCompat <- read.csv("https://docs.tibco.com/pub/enterprise-runtime-for-R/6.1.3/doc/
csv/CRANonTERR-Linux.csv",
#   stringsAsFactors=FALSE)
#
#packageCompat <- read.csv("https://docs.tibco.com/pub/enterprise-runtime-for-R/6.1.3/doc/
csv/CRANonTERR-Win.csv",
#   stringsAsFactors=FALSE)
#
subset(packageCompat, Package.Name=="caret")
```

```
## (update)
```

The returned results resemble the following for the above example.

Package.Name	Version	Status	Percent.Successful	Total.Executed
1608	caret 6.0-86	Mostly successful	98.5%	205
Passed Failed Graphics Random.Numbers				
1608	202 3	17	100	

This table shows how to read the results for this example. (Shows sample results for running the example on Linux. Results for Windows can vary slightly.)

Column name	Result
Package.Name	caret
Version	6.0-86
Status	Mostly successful
Percent.Successful	98.5%
Total.Executed	205
Passed	202
Failed	3
Graphics	17
Random.Numbers	100

TERR console code example for BioConductor

You can use the TERR console to quickly access a summary of the information. The following example returns the results for testing the help files for the BioConductor package limma. You can change the example to match the platform and package of your choice.

- 1. Change the CSV file name to match the platform (Linux or Windows).
- 2. Remove the comment markers for the CSV file name.
- 3. Provide the name of the package you want to query.

```
# Example: BioConductor tests compatibility with this version of TERR
#
#packageCompat <- read.csv("https://docs.tibco.com/pub/enterprise-runtime-for-R/6.1.3/doc/
csv/BioConTERR-Linux.csv",
# stringsAsFactors=FALSE)
#
#packageCompat <- read.csv("https://docs.tibco.com/pub/enterprise-runtime-for-R/6.1.3/doc/
csv/BioConTERR-Win.csv",
# stringsAsFactors=FALSE)
#
subset(packageCompat, Package.Name=="limma")
## (update)
```

The returned results resemble the following for the above example.

Package.Name	Version	Status	Percent.Successful	Total.Executed
901	limma 3.44.3	Mostly successful	96.9	391
Passed Failed Graphics Random.Numbers				

901 379 12 49 75

This table shows how to read the results for this example. (Shows sample results for running the example on Linux. Results for Windows can vary slightly.)

Column name	Result
Package.Name	limma
Version	3.44.3
Status	Mostly successful
Percent.Successful	96.9%
Total.Executed	391
Passed	379
Failed	12
Graphics	49
Random.Numbers	75

Update or Reinstall a Version of TERR

When you update to a more recent version of TERR, remove the previous version, and follow the guidelines to protect your installed packages.



Installing TERR over a previous TERR installation without removing it can cause unexpected failures. To remove TERR, follow the instructions for your operating system.



For a list of operating systems that TERR is supported on, see the [Spotfire Enterprise Runtime for R system requirements](#).

When you update to a new version of TERR, follow the guidance in "Package installation locations and recommendations for updating" in the [Package Management](#) section of the *Spotfire® Enterprise Runtime for R Technical Documentation*.

On Linux

- From the command line, run the command `rm -rf TERR_HOME`, where `TERR_HOME` is the installation directory.

On Windows

- From the Settings app, click **Apps**, and then from the **Apps & features** list, double-click run the listing **Spotfire Enterprise Runtime for R <version#>**.

After uninstalling TERR, run the installer for the version of TERR you want to install.

Closed Issues

Version 6.1 of TERR contains the following closed issues.

TERR 6.1.4

Key	Description
TERR-8039	Current versions of RStudio Desktop do not start up when configured with Spotfire Enterprise Runtime for R.
TERR-8073	Certain CRAN packages, such as <code>dplyr</code> , cannot be loaded into TERR using a <code>library(dplyr)</code> call due to embedded promises in the package lazy load databases.
TERR-8091	<code>formatC</code> returns bad values when you format strings that contain values not representable as an integer (that is, values above approximately 2.1 billion or below approximately -2.1 billion) using <code>format='d'</code> .

TERR 6.1.3

Key	Description
TERR-8060	The function <code>rbinom()</code> can generate unexpected erroneous results in some cases.
TERR-8039	Current versions of RStudio Desktop do not start up when configured with Spotfire Enterprise Runtime for R.

TERR 6.1.2

Version 6.1.2 has no closed issues.

TERR 6.1.1

Version 6.1.1 of TERR contains the following closed issues.

Key	Description
TERR-8050	The first time you open RStudio from TERR Tools in the Spotfire Analyst, you might see an error saying that the file <code>Desktop.ini</code> is not found.

TERR 6.1.0

Version 6.1.0 of TERR contains the following closed issues.

Key	Description
TERR-8035	The data set for the aggregation example includes column names with a different case than the case used in the example, causing the function to fail.
TERR-8034	The <code>htmlTable</code> function in the <code>SpotfireUtils</code> package does not properly escape user-provided characters as HTML entities.
TERR-8033	Trying to create a classification model in Spotfire using a large number of columns results in Spotfire becoming unresponsive.

Known Issues

Version 6.1 of TERR contains the following known issues.

In this release, some open-source R functionality is not available, including graphics devices, and some functions from the base and stats packages. Likewise, S4 is not entirely compatible. The following table lists additional known issues.

Issue	Description
TERR-4993	On Linux, you cannot save TERR Command History to a file.
TERR-5488	If you receive the message "SSL certificate problem: unable to get local issuer certificate" when accessing SSL protected URLs (for example, <code>https://</code>), make sure that your system has the latest version of the certificate authority database for your system. On RedHat 5, this should be <code>`yum update openssl`</code> . On RedHat 6, this should be <code>`yum update ca-certificates`</code> .
TERR-6422	Setting breakpoints in RStudio 0.99.903 with TERR on Windows can cause it to crash. When a script is sourced, and if it has breakpoints set, RStudio for Windows can crash. This crash does not occur when breakpoints are set inside a function and the function is called.
TERR-6576	If you try to use an RStudio feature that requires the <code>rmarkdown</code> package or the <code>shiny</code> package, and the required package is not already installed, then this process currently fails if RStudio is configured with the TERR engine. To work around this problem, at the command prompt, call <code>install.packages()</code> to install the <code>rmarkdown</code> and <code>shiny</code> packages.
TERR-6812	<p>Due to changes in open-source R version 3.5 and resulting compatibility changes in TERR 5.0, packages that are built with a version of TERR prior to 5.0 must be rebuilt.</p> <ul style="list-style-type: none"> To install a binary package from a repository, always call <code>install.packages(pkgname)</code> from TERR. The <code>install.packages</code> function finds the correct binary version in the repository for your version of TERR. Manually downloading the binary package from CRAN can result in errors when you use it with TERR. To install a package from source, try installing it first with TERR (with <code>install.packages</code> in TERR or with <code>TERR CMD INSTALL</code> from a command line). To install a package from source that you cannot build with TERR, install the package with the version of open-source R tested with TERR.
TERR-7077	Certain packages, such as <code>rjava</code> , cannot be installed with TERR from source under Centos. If you encounter a package that does not install with TERR from source, then you can build the package using open-source R, and then install the binary package in TERR.
TERR-7727	When you view help files in Rstudio, some text in the help (for example, the Arguments and the Value sections) might not be visible if you are using an Rstudio Editor theme with a dark background.
TERR-7728	When you run TERR under Rstudio Server, if you end the session using File > Quit Session , the following message is displayed: <i>Session Error, The previous R session was abnormally terminated due to an unexpected crash.</i> This problem can also occur when you open a project using the File > New Project or File > Open Project menu commands.

Package search order

When you install a package using TERR, by default, TERR first checks for the package on TRAN, and then checks on Posit. TERR installs the first version it finds. This is different than open-source R, which installs packages according to the newest version number available on CRAN. This difference is by design, because occasionally a CRAN package update causes a break with TERR compatibility, so we make available a tested version of the package on TRAN.

If you need to install one of these packages using open-source R (for example, to get source code on Linux), you can install the CRAN package, and then set `options()$repos` to install from only TRAN before reinstalling the package.

See "Specifying an older package on TRAN" in the *Spotfire® Enterprise Runtime for R Technical Documentation* for more information.

When running on RedHat Linux, Spotfire Enterprise Runtime for R processes spawned by the parallel package may immediately crash

We have seen a problem when running TERR on RedHat Linux with versions of Java earlier than 1.7.0_40. If you call the `makeCluster` function in the parallel package to spawn new TERR processes, these processes may immediately crash with a fatal Java error. To test if this problem is occurring, try the following:

```
library(parallel)
cl <- makeCluster(1, outfile="")
# create cluster with one spawned process
# specifying outfile="" to print all output
cl <- makeCluster(1, outfile="")
clusterEvalQ(cl, 123)
```

If this problem is occurring, you see an error such as the following:

```
> library(parallel)
> # create cluster with one spawned process
> # specifying outfile="" to print all output from the process
> cl <- makeCluster(1, outfile="")
Creating 1 TERR cluster nodes at Tue Nov 21 9:38:25 2023
> clusterEvalQ(cl, 123)
1: #
1: # A fatal error has been detected by the Java Runtime Environment:
1: #
1: # SIGSEGV (0xb) at pc=0x0000003ac2cbbfa5, pid=12649, tid=1075054912
1: #1: # JRE version: 7.0_13-b20
1: # Java VM: Java HotSpot(TM) 64-Bit Server VM (23.7-b01 mixed mode linux-amd64
compressed oops)
1: # Problematic frame:
1: # C [libstdc++.so.6+0xbbf5a5] __cxa_allocate_exception+0x55
1: #
1: # Failed to write core dump. Core dumps have been disabled. To enable core
dumping, try "ulimit -c unlimited" before starting Java again
1: #
1: # An error report file with more information is saved as:
1: # /a/seafiler01.na.tibco.com/vol/vol2/users/jdoe/hs_err_pid12649.log
1: #
1: # If you would like to submit a bug report, please visit:
1: # http://bugreport.sun.com/bugreport/crash.jsp
1: #
Error in waitForClusterReady(cl) : some cluster nodes have crashed or stopped: all crashed
```

The workaround for this problem is to set the `LD_PRELOAD` environment variable to `libstdc++.so.6`. This can be done before TERR is started, or within TERR, before the parallel library has been loaded:

```
> Sys.setenv("LD_PRELOAD"="libstdc++.so.6")
> library(parallel)
> cl <- makeCluster(1, outfile="")
Creating 1 TERR cluster nodes at Tue Nov 21 10:18:56 2023
> # create cluster with one spawned process
> # specifying outfile="" to print all output
> cl <- makeCluster(1, outfile="")
Creating 1 TERR cluster nodes at Tue Nov 21 10:19:51 2023
> clusterEvalQ(cl, 123)
1: Cloud Software Group, Inc. Confidential Information
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1: Spotfire Enterprise Runtime for R version 6.1.1 for Microsoft Windows 64-bit
1:
1: Type 'help()' for help.
1: Type 'q()' to quit.
1: started engine node pid==15788 at Tue Nov 21 10:23:54 2023
[[1]]
[1] 123
>
```

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For information about the Spotfire® products, you can read the documentation, contact Spotfire Support, and join the Spotfire Community.

How to Access Spotfire Documentation

Documentation for Spotfire and TIBCO products is available on the [TIBCO Product Documentation](#) website, mainly in HTML and PDF formats.

The website is updated frequently and is more current than any other documentation included with the product.

Spotfire Documentation

The documentation for all Spotfire products is available on the [Spotfire Documentation](#) page. This page takes you directly to the latest version of each document.

To see documents for a specific Spotfire product or version, click the link of the product under 'Other versions', and on the product page, choose your version from the top right selector.

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Some release versions of Spotfire products are designated as long-term support (LTS) versions. LTS versions are typically supported for up to 36 months from release. Defect corrections will typically be delivered in a new release version and as hotfixes or service packs to one or more LTS versions. See also <https://spotfi.re/lts>.

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You can contact the Support team in the following ways:

- For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the support portal at <https://spotfi.re/support>.
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