

# Package ‘rcom’

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**Title** R COM Client Interface and internal COM Server

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**Description** R functions to interface with COM objects, R exposed to COM Clients

**License** GPL-2

**Depends** R (>= 2.9.0), rscproxy (>= 2.0-1), utils

**LinkingTo** rscproxy

**SystemRequirements** Windows, statconnDCOM (>= 3.4-0B1)

**OS\_type** windows

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|                 |                           |
|-----------------|---------------------------|
| comCreateObject | <i>Create COM Objects</i> |
|-----------------|---------------------------|

---

### Description

Creates a new COM object specified by its program identifier.

The object will be released automatically when the last reference to the object is removed. To speed up this process, assign some NULL value as soon as you don't need the object any more.

### Usage

```
comCreateObject(progId)
```

### Arguments

|        |  |
|--------|--|
| progId | ProgId of COM object to create, e.g. "Excel.Application" |
|--------|--|

### Value

comCreateObject returns an object of class "COMObject".

### Author(s)

Thomas Baier

### Examples

```
# start up excel
## Not run: x<-comCreateObject("Excel.Application")

# and make it visible
## Not run: comSetProperty(x,"Visible",TRUE)

# do something now...
```

---

|              |   |
|--------------|---|
| comGetObject | <i>Get Access to Existing COM Objects</i> |
|--------------|---|

---

**Description**

Tries to find a running instance of the specified progid and returns this object.

Use this function to use services provided by an already running application, e.g. the currently visible instance of Microsoft Excel.

The object will be released automatically when the last reference to the object is removed. To speed up this process, assign some NULL value as soon as you don't need the object any more.

**Usage**

```
comGetObject(progid)
```

**Arguments**

|        |   |
|--------|---|
| progid | ProgId of COM object to get access to, e.g. "Excel.Application" |
|--------|---|

**Value**

comGetObject returns an object of class "COMObject".

**Author(s)**

Thomas Baier

**Examples**

```
# get access to excel
## Not run: x<-comGetObject("Excel.Application")

# and make it visible
## Not run: comSetProperty(x,"Visible",TRUE);

# do something now...
```

---

comGetObjectInfo      *Get Information about a COM Objects*

---

**Description**

This function will return information about the COM object passed as parameter.

Use this function to find out what rcom thinks about the object.

Use this function for debugging purposes to find out why rcom fails.

Not yet implemented!

**Usage**

```
comGetObjectInfo(handle)
```

**Arguments**

handle                  COM object (class "COMObject") as returned by e.g. comCreateObject

**Value**

comGetObject will return a list of all functions and their descriptions

**Author(s)**

Thomas Baier

---

comGetPicture      *Get the clipboard contents as IPictureDisp Object*

---

**Description**

This function checks the contents of the (local) clipboard for an enhanced metafile object. If found, a COM object implementing the standard COM interface IPictureDisp is created from the clipboard contents.

Enhanced metafiles in the clipboard are created using R's graphics functions if the device win.metafile with an empty filename is used.

You have to close the device before retrieving the picture object.

Does not work at the moment due to problems in Microsoft's IPictureDisp.

**Usage**

```
comGetPicture()
```

**Value**

comGetObject returns an object of class "COMObject".

**Author(s)**

Thomas Baier

**Examples**

```
## Not run: win.metafile()
## Not run: plot(sin(1:100))
## Not run: dev.off()
## Not run: pic<-comGetPicture()
```

---

comGetProperty      *Read One of a COM Object's Properties*

---

**Description**

Reads one of the COM object's properties.

**Usage**

```
comGetProperty(handle, property, ...)
```

**Arguments**

|          |  |
|----------|--|
| handle   | COM object (class "COMObject") as returned by e.g. comCreateObject                 |
| property | name of property to get as a character string                                      |
| ...      | optional additional arguments for property specification (e.g. index for an array) |

**Value**

The return value depends on the (data) type of the property to read.

**Author(s)**

Thomas Baier

**See Also**

[comInvoke](#), [comSetProperty](#)

## Examples

```
# start up excel
## Not run: x<-comCreateObject("Excel.Application")

# retrieve the "Visible" property
## Not run: v <- comGetProperty(x,"Visible")

# add a new workbook to Excel and gain access to the first worksheet
## Not run: newwb <- comInvoke(comGetProperty(x,"Workbooks"),"Add")
## Not run: ws <- comGetProperty(newwb,"Worksheets",1)

# get a specific range
## Not run: r <- comGetProperty(ws,"Range","A1","B4")

# do something now...
```

---

comGetVersion

*Get rcom version information*

---

## Description

This function returns the version of the currently installed rcom package as a floating point number.

Use this function to find out which version you are using. The version must be specified when reporting problems.

## Usage

```
comGetVersion()
```

## Value

comGetVersion returns the version number in format `major.minor`.

## Author(s)

Thomas Baier

---

|           |   |
|-----------|---|
| comInvoke | <i>Invoke a function (method) on a COM Object</i> |
|-----------|---|

---

**Description**

Invokes a function (method) on a COM object.

**Usage**

```
comInvoke(handle,method,...)
```

**Arguments**

|        |  |
|--------|--|
| handle | COM object (class "COMObject") as returned by e.g. comCreateObject |
| method | name of method to call as a character string                       |
| ...    | parameters passed when calling the method                          |

**Value**

The return value of comInvoke depends on the function (method) called.

**Author(s)**

Thomas Baier

**See Also**

[comSetProperty](#), [comGetProperty](#)

---

|                  |   |
|------------------|---|
| comIsValidHandle | <i>Check if the COM object is valid</i> |
|------------------|---|

---

**Description**

Check if the passed object is a valid COM object

**Usage**

```
comIsValidHandle(handle)
```

**Arguments**

|        |  |
|--------|--|
| handle | COM object (class "COMObject") as returned by e.g. comCreateObject |
|--------|--|

**Value**

com.isValid returns TRUE if the object is valid, FALSE otherwise.

**Author(s)**

Thomas Baier

**See Also**

[comCreateObject](#), [comGetObject](#)

---

comRegisterRegistry     *Register the COM server in the registry*

---

**Description**

This function will register the COM server and its associated type library with the system (registry).

Technically, this will register the type library and add local-server entries for the prog and class ids.

This function has to be called when installing the package. Otherwise, neither the type library will be available (automation clients cannot use the server) nor a mapping from version independent and version-dependant prog-id will be available.

**Usage**

```
comRegisterRegistry()
```

**Author(s)**

Thomas Baier

**See Also**

[comUnregisterRegistry](#)

---

|                   |                                  |
|-------------------|----------------------------------|
| comRegisterServer | <i>Initialize the COM server</i> |
|-------------------|----------------------------------|

---

**Description**

This function registers the COM server at runtime. It is called automatically when the package rcom is loaded.

Technically, this will register the class factory in the system, so calls to CoCreateInstance() from client applications will succeed.

*Remark: The type library will be loaded on demand later on*

comUnregisterServer() is used to unregister the class object (class factory) again.

**Usage**

```
comRegisterServer()
```

**Author(s)**

Thomas Baier

**See Also**

[comUnregisterServer](#), [comRegisterRegistry](#)

---

|                |   |
|----------------|---|
| comSetProperty | <i>Set One of the COM Object's Properties</i> |
|----------------|---|

---

**Description**

Set one of the COM object's properties.

In case the property is an indexed property, pass the index value before the property value.

**Usage**

```
comSetProperty(handle, property, ...)
```

**Arguments**

|          |  |
|----------|--|
| handle   | COM object (class "COMObject") as returned by e.g. comCreateObject |
| property | name of property to get as a character string                      |
| ...      | the value the property should be set to                            |

**Author(s)**

Thomas Baier

**See Also**

[comInvoke](#), [comGetProperty](#)

**Examples**

```
# start up excel
## Not run: x<-comCreateObject("Excel.Application")

# and make it visible
## Not run: comSetProperty(x,"Visible",TRUE);

# set the value of index 3 of the indexed property ArrayProperty
## Not run: comSetProperty(x,"ArrayProperty",3,TRUE);

# do something now...
```

---

comThis

*Return the COM Object for this R Instance*

---

**Description**

Returns the COM object for this R Instance.

Use this function to e.g. pass a handle to the running R COM server to another COM object.

The object will be released automatically when the last reference to the object is removed. To speed up this process, assign some NULL value as soon as you don't need the object any more.

**Usage**

```
comThis()
```

**Value**

comThis returns an object of class "COMObject" representing the IStatConnector/IDispatch of the current R.

**Author(s)**

Thomas Baier

**Examples**

```
# get access to R
## Not run: x<-comThis();

# do something with R
## Not run: comInvoke(x,"SetSymbol","abc",1);
```

---

|          |                                     |
|----------|-------------------------------------|
| comTrace | <i>Trace information about SEXP</i> |
|----------|-------------------------------------|

---

**Description**

This function will trace all passed parameters (variables, constants etc) to the R console.

Use this function to find out what rcom thinks about the parameters (e.g. which data types are recognized).

Use this function for debugging purposes to find out why rcom fails.

**Usage**

```
comTrace(x)
```

**Arguments**

x                    expression (variable, constant) to trace

**Author(s)**

Thomas Baier

---

|                |  |
|----------------|--|
| comTraceObject | <i>Trace information about the passed object</i> |
|----------------|--|

---

**Description**

This function will trace information about the COM object passed as parameter.

Use this function to find out what rcom thinks about the object.

Use this function for debugging purposes to find out why rcom fails.

**Usage**

```
comTraceObject(handle)
```

**Arguments**

handle                COM object (class "COMObject") as returned by e.g. comCreateObject

**Author(s)**

Thomas Baier

comUnregisterRegistry *Deregister the COM server from the registry*

---

**Description**

This function will deregister the COM server and its associated type library from the registry/system. Call this function before uninstalling the package to clean-up the registry.

**Usage**

```
comUnregisterRegistry()
```

**Author(s)**

Thomas Baier

**See Also**

[comRegisterRegistry](#)

---

comUnregisterServer *Terminate the COM server*

---

**Description**

This function will deregister the COM server at runtime.

Technically, this will unregister the class factory in the system, so future calls to `CoCreateInstance()` from client applications will fail.

**Usage**

```
comUnregisterServer()
```

**Author(s)**

Thomas Baier

**See Also**

[comRegisterServer](#), [comUnregisterRegistry](#)

---

```
installstatconnDCOM    install statconnDCOM
```

---

### Description

Installs statconnDCOM by downloading and running a Windows installer program creating its own uninstaller.

### Usage

```
installstatconnDCOM(id="rcom")
```

### Arguments

id                    source identifier, should be left the default value

### Details

rcom requires an installation of statconnDCOM to work. installstatconnDCOM() downloads a binary installer statconnDCOM.latest.exe from its web site, <http://rcom.univie.ac.at/>.

It is possible to install (or update) statconnDCOM on a machine without Internet access. To accomplish this, download the current version from <http://rcom.univie.ac.at/>, transfer it to the machine without Internet access and run in on this machine. Administrator privileges are needed to run this installer.

---

```
[[] .COMObject            Read One of a COM Object's Properties
```

---

### Description

Reads one of the COM object's properties.

### Usage

```
## S3 method for class 'COMObject'
handle[[property,...]]
```

### Arguments

handle                COM object (class "COMObject") as returned by e.g. comCreateObject  
property              name of property to get as a character string  
...                    optional additional arguments for property specification (e.g. index for an array)

**Value**

When reading a property, the return value depends on the (data) type of the property to read.

**Author(s)**

Gabor Grothendieck

**See Also**

[comGetProperty](#), [\\$.COMObject](#)

**Examples**

```
# start up excel
## Not run: x<-comCreateObject("Excel.Application")

# retrieve the "Visible" property
## Not run: v <- x[["Visible"]]
```

---

[[<-COMObject

*Write One of a COM Object's Properties*

---

**Description**

Writes one of the COM object's properties.

**Usage**

```
## S3 replacement method for class 'COMObject'
handle[[property,...]]<-value
```

**Arguments**

|          |  |
|----------|--|
| handle   | COM object (class "COMObject") as returned by e.g. <code>comCreateObject</code>    |
| property | name of property to get as a character string                                      |
| ...      | optional additional arguments for property specification (e.g. index for an array) |
| value    | the value the property should be set to  |

**Value**

The return value is the object handle.

**Author(s)**

Gabor Grothendieck

**See Also**

[comSetProperty](#), [\\$.COMObject](#)

**Examples**

```
# start up excel
## Not run: x<-comCreateObject("Excel.Application")

# and make it visible
## Not run: x[["Visible"]] <- TRUE;
```

---

|              |   |
|--------------|---|
| \$.COMObject | <i>Invoke a function (method) on a COM Object</i> |
|--------------|---|

---

**Description**

Invokes a function (method) on a COM object.

**Usage**

```
## S3 method for class 'COMObject'
handle$method,...
```

**Arguments**

|        |  |
|--------|--|
| handle | COM object (class "COMObject") as returned by e.g. comCreateObject |
| method | name of method to call as a character string                       |
| ...    | parameters passed when calling the method                          |

**Value**

The return value of \$.COMObject depends on the function (method) called.

**Author(s)**

Gabor Grothendieck

**See Also**

[comInvoke](#), [\[\[.COMObject](#), [\[\[<-.COMObject](#)

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