

# The Deployment of RightNow Component Files

## Introduction and objective

The RightNow Service component files are downloaded the first time that a user accesses the administration console using a URL of the form below:

`http://<sitename>.custhelp.com/cgi-bin/<sitename>/login`

Each time after that, when the staff member accesses the login page, a file compare is completed and any new files are downloaded. A number of behavior files are loaded on each login.

While this works well in environments where users have a degree of flexibility or empowerment, in those areas where user rights are restricted due to security or corporate policies this can create small problems.

As a result, a number of methodologies have been defined to allow the staff member to easily deploy and manage these items without restricting RightNow Service functionality.

This document serves to accomplish three goals.

1. Describe the default installation process.
2. Define the components, their install locations and function
3. Describe the installation methodologies

This is completed in three sections.

1. Default Installation Process and Functionality
2. Deployment Methodology (including description of Component Manager)
3. Appendices containing detailed file and component list and log entries.

# Default Installation Process and Functionality

## RightNow Component Files

Starting with RightNow Service version 6.0.2, the files needed for program operation are downloaded or updated on a client machine at the start of program operation. This installation of the RightNow components is controlled through the **RightNow Component Manager**.

Through this method, the most recent versions of the files for the current company RightNow Service version are always loaded on a client machine.

## RNT Component Manager Installation and Operation

The RightNow Component Manager controls the installation of the RightNow component files. These files include:

- HTML component behavior files (**.htc files**)
- Component modules (**.RNTmodule** files)
- Dictionary files (**.tlx, .clx** files)
- Executable files (**.exe files**).

Installation requirements and processes are detailed below.

## Requirements for Initial Installation of Files

The initial installation of the component files requires administrative privileges on the local workstation to which the files are being installed. This is required to properly install and register the Component Manager ActiveX control file RNTProcMan.ocx. The RNTProcMan.ocx file is installed in the System32 directory e.g. c:\WINNT\System32.

This file allows all users logging onto a workstation to download and install the component files. For this reason, RNTProcMan.ocx must be installed by the initial user with administrative privileges assigned to the file.

**NOTE: INITIAL INSTALLATION OF THESE FILES MUST BE PERFORMED BY A USER WITH LOCAL ADMINISTRATIVE PRIVILIGES TO THE WORKSTATION. FAILURE TO DO SO MAY RESULT IN "ACCESS DENIED" ERRORS AS USERS ATTEMPT TO LOG IN TO RIGHTNOW SERVICE.**

## Component Manager Operation

The component installation process is activated upon navigation to the administrative login page of RightNow Service through the **ComponentManager.RNTModule** file, and is recorded in the **ComponentManager.log** file. This log file begins when any file becomes queued for downloading. The process for initial installation is described below:

1. The installation directory for component files, executable files, and dictionary files is determined. This is typically a subdirectory under the "RNT" directory, located in each Windows user profile. (eg. C:\\Documents and Settings\\<username>\\RNT\\<sitename>).
2. The installation directory is checked for the **ComponentManager.RNTmodule** file. If the timestamp of the currently installed file does not match the timestamp of the most current version of the file, the **ComponentManager.RNTmodule** file is queued for downloading, and is downloaded. If a download occurs, the **ComponentManager.RNTModule** is restarted.
3. The timestamps of the components are compared to the timestamps of the most recent files. If these timestamps differ, the current versions of the files are added to an action queue for downloading.
4. If any controls have been queued, clearing of the browser cache and behavior files are queued.
5. The action queue is processed. This causes all queued files to be downloaded into the installation directory. It also causes the browser cache to be cleared of all RightNow HTML component behavior files.
6. Downloaded component files are registered using **DLLRegSvr**. Information regarding file registration is located.
7. All HTML component behavior files are downloaded and placed into the browser cache.
8. A new entry in the **ComponentManager.log** file is started.
9. Every component in the "RNT" directory that was just downloaded is unregistered and reregistered with Windows.

## Registry Entries Made By Software

The registry entries made by the RightNow Service files are typical of all entries made when using the Regsvr32.exe registration utility. The component is registered under its unique CLSID, for example, HKEY\_CLASSES\_ROOT\\CLSID\\{7912C723-2006-408B-B821-25D14669EF36}.

After the component is registered, the registry entry is modified to remove the absolute path. For example, if the user "smithj" on the interface "ourcorp" was the first administrator to navigate to the administrative login page, the registry entry under the key above is initially "C:\\Documents and Settings\\smithj\\RNT\\ourcorp\\Analytics.RNTmodule".

This entry is edited to become "Analytics.RNTmodule".

To determine the registry entries made by the software, either the component module name, or the CSLID can be searched for in the system registry. These registry entries are located under the HKEY\_CLASSES\_ROOT\\CLSID key.

# RNT Deployment Methodology

There are numerous methodologies that can be used to deploy. The four main ones are listed below. In order for any one of these to work, the following results must occur to achieve a successful login.

1. A folder needs to exist in the users Profile in documents and settings called RNT with the site name as a subfolder. This needs to contain the listed RightNow Service components. (C:\\Documents and Settings\\<username >\\ RNT\\<sitename>)
2. The Activex Control RNTProcMan.ocx needs to be downloaded to the c:\\WINNT\\system32 directory and registered with Regsvr32.exe in admin mode.
3. Behavior files need to be written to the Temporary Internet files location in the users profile.

Installing these files can be accomplished through a number of methods.

Method 1: Log into the workstation as a user having local workstation administrative privileges, and navigate to the RightNow Service administrative login page. When this page is navigated to, component installation automatically executes, and automatically installs the component manager ActiveX control file (RNTProcMan.ocx) with administrative rights.

Method 2: Log into the workstation as a user without local workstation administrative rights. When navigating to the RightNow Service administrative page, run Microsoft Internet Explorer as an administrative user. See Appendix A for information on running programs as another user.

Method 3: Utilise the RightNow Component installer to deploy the Component files and distribute the ActiveX control file and register manually (once off) one every machine.

Method 4:  
Download the component manager ActiveX control file. Use SMS, ADO, or another such mechanism to deliver and register the control file.

In order for the tool to be available to users without the ability to download files or admin rights to their local machine, the following steps need to be completed.

It is recommended that the Customer Admin/Technical specialist complete the method as a script, SMS package or package appropriate to the local environment and so ensure each step is performed in line with company IT policy.

The process for each component is detailed below and it is suggested that these be combined in a manner that best suits the user environment.

The RightNow Component installer can be used for companies requiring an alternate method of downloading and installing the RightNow component files. An example of this is for the use of roaming profiles. The component files can be downloaded, and pushed to each user profile through a script. When a user with a roaming profile logs into a workstation, their profile already has the required components in the profile. The usage of this program is detailed below:

## Component Installer Command Line Parameters and Usage

Usage: RNTCompInst <dbname> <xmlfile> [componentdir]

<dbname> - Name of the site database for installing remotely. If 'download' is used in place of the database name, the components are downloaded to the current directory.

<xmlfile> - The URL of the site's xml component list.

[componentdir] – Optional path to a network directory from which the component files are downloaded.

## Command Line Installation Example

A company can cause a download of the files from a company server through the following steps:

1. Create a shared network directory. For this example, the shared directory is "\\machine\rntcomps".
2. Place the RNTCompInst file in the shared directory.
3. Download the components into the shared directory by executing the RNTCompInst file as below. If the keyword "download" is used in place of the database name, the files are downloaded to the current working directory:  
RNTCompInst download http://site.custhelp.com/cgi-bin/site.cfg/php/admin/session/xmlcomponents.php
4. Add the following to the login script of any workstation to download the files from the sever:  
\\machine\rntcomps\RNTCompInst dbname http://site/cgi-bin/site.cfg/php/admin/session/xmlcomponents.php \\machine\rntcomps

## RNT Process Manager Manual Installation

In the event the RightNow Process Manager cannot be installed by navigating to the RightNow Service administrative login page, another method exists for installation. The procedure for manual installation is as follows:

1. Download and place the Process Manager file, RNTProcMan.ocx, into the Windows System32 directory. This is typically under the path C:\WINNT\System32.
2. If the logged-in user has local administrative privileges, run Regsvr32.exe on the Process manager file through the following:

```
Start > Run > regsvr32 C:\WINNT\System32\RNTProcMan32.ocx
```

3. If the logged-in user does not have local administrative privileges, regsvr32.exe can be "Run as" an administrator by navigating to the file C:\WINNT\System32\regsvr32.exe, right-clicking on the file, and selecting "Run As".

## Determining Database Name

The database name is typically the same name as the first interface created for RightNow Service. However, this is not always the case. If you have questions regarding the database name of your site, please submit an incident to <http://rightnow.custhelp.com>.

# Appendix A – Related Documentation and Links

## **File Registration with Regsvr32.exe and DLLRegSvr**

[http://msdn.microsoft.com/library/default.asp?url=/library/en-us/waguide/htm/utilities\\_3.asp](http://msdn.microsoft.com/library/default.asp?url=/library/en-us/waguide/htm/utilities_3.asp)

## **HTML Component (behavior) Files**

<http://msdn.microsoft.com/library/default.asp?url=/workshop/components/htc/reference/htcref.asp>

## **Running Files as Another User**

<http://support.microsoft.com/default.aspx?scid=kb;en-us;305780&sd=tech>

## **CLSID Explanation**

[http://msdn.microsoft.com/library/default.asp?url=/library/en-us/com/htm/reg\\_6vjt.asp](http://msdn.microsoft.com/library/default.asp?url=/library/en-us/com/htm/reg_6vjt.asp)

## Appendix B – Files and Installation Paths

All files installed by RightNow Service are listed below. The names of dictionary files (\*.tlx and \*.clx files) may differ due to language. \*Component Manager determines if these files are located in the System32 directory. If they do not exist, they are downloaded into the RightNow Service installation directory.

### Version 7.0.+

Path: C:\WINNT\System32

Alternate Path: C:\(Windows Installation Directory)\System32

Files: RNTProcMan.ocx

Path: C:\Documents and Settings\<<ProfileName>\RNT\<<Database Name>

Alternate Path: C:\MyDocuments\RNT\<<Database Name>

Files: PermissionInstaller.exe      ctcapi32.dll\*  
rightnow.exe                      MFC71u.dll\*  
RNTXGen.exe                        msdaipp.dll\*  
ColorPicker.RNTmodule            msvc71.dll\*  
Analytics.RNTmodule                msucr71.dll\*  
PDF.RNTmodule  
RNTXGen.exe  
ExpressionValidator.RNTmodule  
Menu.RNTmodule  
Treeview.RNTmodule  
Spellchecker.RNTmodule  
SpellcheckerUI.RNTmodule  
ssceam.tlx  
ssceam2.clx  
correctam.tlx  
userdic.tlx

Path: C:\Documents and Settings\<<Windows Profile>\Local Settings\Temporary Internet Files

Files: body.htc                      info.htc                      combo.js  
bool.htc                          intval.htc                    dttm.js  
clip.htc                          menu\_btn.htc                grid.js  
color.htc                        menu fld.htc                menu\_btn.js  
combo.htc                        multi.htc                    menu fld.js  
combo\_txt.htc                    selbox.htc  
currency.htc                    select.htc  
decval.htc                        selstate.htc  
dttm\_c.htc                        table\_tt.htc  
dttm.htc                          textarea.htc  
dttm.js                            toolbtn.htc  
font.htc                          txtfld.htc  
grid.htc                          txtmask.htc  
hier\_select.htc                  valtable.htc  
ifr\_set.htc                        widthval.htc

## Version 6.0.2.x, 6.0.3.x

Path: C:\WINNT\System32

Alternate Path: C:\<Windows Installation Directory>\System32

Files: RNTProcMan.ocx

Path: C:\Documents and Settings\<ProfileName>\RNT\<DatabaseName>

Alternate Path: C:\MyDocuments\RNT\<DatabaseName>

Files: rightnow.exe  
RNTXGen.exe  
Analytics.RNTModule  
ColorPicker.RNTModule  
ComponentManager.RNTModule  
ContactUploader.RNTModule  
ExpressionValidator.RNTModule  
Menu.RNTModule  
PDF.RNTModule  
QuoteDoc.RNTModule  
QuoteDoc2.RNTModule  
Spellchecker.RNTModule  
SpellcheckerUI.RNTModule  
Treeview.RNTModule  
ComponentManager.log  
correctam.tlx  
ssceam.tlx  
ssceam.clx  
userdic.tlx

Path: C:\Documents and Settings\<Windows Profile>\Local Settings\Temporary Internet

Files

Files: bool.htc	multi.htc	dttm.js
clip.htc	menu fld.htc	menu_btn.js
currency.htc	menu_btn.htc	menu fld.js
dttm.htc	textarea.htc	
dttm_c.htc	toolbtn.htc	
hier_select.htc	txtfld.htc	
intval.htc	txtmask.htc	
info.htc	valtable.htc	
ifr_set.htc	widthval.htc	



## Appendix C – ComponentManager.Log Messages

"Install directory is ...<Installation Directory>" – Denotes searching for or creating the noted directory for installation of RightNow component files.

"Timestamp on <File> is <Date>, should be <Date-time>" – The noted file has a different timestamp than the current version of the file.

"<Installation directory>\<Module> not found" – The <Module> searched for was not found in the installation directory. It should then be queued for download.

"Queuing RightNow <Module> for download from <Site>" – The noted module has been placed in a queue to be downloaded.

"Downloaded <Module>" – The noted module has attempted to download.

"<Module> downloaded successfully" – The noted module has successfully completed download.

"Registering Controls" – The components are registered with through calls to LoadLibrary and DLLRegisterServer.

"Updating registry entry for <Module>" – Removing the absolute path from module registry entry created when <Module> is registered. This, in conjunction with the operation of the RightNow browser, allows different versions of the controls to run on the same machine (if necessary).

"ERROR: LoadLibrary(<Module>) failed." – Failure of <Module> to properly load.

"ERROR: Expecting <N> bytes, received <X> bytes." – The downloaded file was a different size than the expected download file. This can occur when a file is missing from a server, or is a different version than expected.

"Associating <extension type> Extension" – Typically seen with the RNR extension, this entry denotes the association of files with a particular extension to the correct RightNow executable file.

"<Installation Directory>\PermissionInstaller.exe returned - <Code>" – The RightNow Permission Installer for version 7.0 return code for execution. This allows for troubleshooting by the Development Department.

"Precaching <File>" – The HTML component file <File> has started download into the Temporary Internet Directory.

"<File> cached successfully" – The HTML component file <File> has been successfully downloaded into the Temporary Internet Directory.

"Clearing Cache" – The Temporary Internet Directory associated with the user profile is being cleared of all files.

"<X> cache entries deleted" – <X> number of files have been cleared from the Temporary Internet Directory associated with the current user profile.

"<Installation Directory>\<Module>" – The following control is the focus of the component manager for action.

"LoadLibrary succeeded" – The RightNow LoadLibrary function for loading and registering the control has occurred.

"Calling DllUnregister" – The current control under the focus of the component manager has been unregistered.

"DllUnregister Done" – The current control under the focus of the component manager has been unregistered.

"Calling DllRegisterServer" – The current control under the focus of the component manager has been registered. This is equivalent to registering the control with regsvr32.exe.

"DllRegisterServer done" – The current control under the focus of the component manager has been successfully registered by DLLRegSvr. This is equivalent to registering the control with regsvr32.exe.

"Freeing Library" – The library loaded to register the current control under the focus of the component manager has been unallocated from memory.

"<Module> registered" – The current control under the focus of the component manager, <Module>, has been successfully registered. This is equivalent to registering the control with regsvr32.exe.

"CLSID\{<X>\InprocServer32" – The current control under the focus of the component manager has been registered under the CLSID <X>. This CLSID can be searched for in the workstation registry.

## Appendix D – Files Used by RightNow Service (Various versions)

### **RNTProcMan.ocx**

- \* \windows\system32 (must be installed by an administrator)
- \* provides an interface into the ComponentManager and a hook point for the ComponentManager self-updating functionality.
- \* only control distributed via .cab

### **ComponentManager.RNTmodule**

- \* \documents and settings\\RNT\- \* downloads controls required for site functionality
- \* replaces controls that aren't current, or may have been maliciously modified
- \* can replace itself through hook provided in RNTProcMan.ocx

### **PermissionInstaller.exe**

- \* \documents and settings\\RNT\- \* creates a StrongName setting in the .net framework for support of .net components based on the RightNow encrypted StrongName key.
- \* executed by the ComponentManager only when it is downloaded (new access to site, or file was updated)

### **rightnow.exe**

- \* \documents and settings\\RNT\- \* the RightNow browser
- \* uses Internet Explorer (IE) API Interfaces
- \* provides an interface to load ActiveX controls from \documents and settings\\RNT\- \* provides extended browser functionality
- \* inhibits some normal browser behaviors (right+click menu, highlighting text, forward/back navigation)

### **mfc71u.dll, mscvp71.dll, msvcr71.dll**

- \* \documents and settings\\RNT\- \* Microsoft runtime DLLs.
- \* only downloaded if not already present in \windows\system32\

### **msdaipp.dll (MOD\_MA\_ENABLED)**

- \* \program files\common files\system\ole db (administrator)
- \* used by QuoteDoc.RNTmodule indirectly through the Microsoft Word ActiveX control.
- \* because of the interaction between our modules and the Microsoft Word ActiveX control, this file must live in either the above directory or \windows\system32. As we do not have access to either of these directories as a non-admin user, we cannot reliably update it if necessary. On machines using a version of Office older than Office 2000 on Windows 2000 or NT, an administrator will need to update the DLL.

### **ctcapi32.dll (CTI\_ENABLED)**

- \* \documents and settings\\RNT\- \* Intel NetMerge telephony integration DLL.
- \* only downloaded if not already present in \windows\system32\

**Menu.RNTmodule**

- \* \documents and settings\\RNT\- \* provides dynamic hierarchical menu functionality used throughout the product

**TreeView.RNTmodule**

- \* \documents and settings\\RNT\- \* provides graphical hierarchical tree functionality used throughout the product

**ColorPicker.RNTmodule**

- \* \documents and settings\\RNT\- \* graphical user interface for selecting colors
- \* used by Analytics and Common- >System Config- >Color Layout

**ExpressionValidator.RNTmodule**

- \* \documents and settings\\RNT\- \* used in view editor to validate expressions (including SQL parsing and schema matching)

**Analytics.RNTmodule**

- \* \documents and settings\\RNT\- \* report rendering interface

**PDF.RNTmodule**

- \* \documents and settings\\RNT\- \* PDF creation functions used by reports

**RNTXGen.exe**

- \* \documents and settings\\RNT\- \* offline report viewer
- \* associates itself with .nrn file extension

**ContactUploader.RNTmodule (MOD\_MA\_ENABLED)**

- \* \documents and settings\\RNT\- \* uploads contacts

**QuoteDoc.RNTmodule (MOD\_SA\_ENABLED)**

- \* \documents and settings\\RNT\- \* uses Microsoft Word ActiveX control to view Quote Templates

**QuoteDoc2.RNTmodule (MOD\_SA\_ENABLED)**

- \* \documents and settings\\RNT\- \* uses Microsoft Word ActiveX control to merge data into Quote Templates

**TemplateCrtr.RNTmodule (MOD\_SA\_ENABLED)**

- \* \documents and settings\\RNT\- \* uses Microsoft Word ActiveX control to edit Quote Templates

**CTI.RNTmodule (CTI\_ENABLED)**

- \* \documents and settings\\RNT\- \* Computer Telephony Integration component (Intel NetMerge wrapper)

**SpellChecker.RNTmodule (SCK\_ENABLED)**

- \* \documents and settings\\RNT\- \* spellchecking engine

**SpellCheckerUI.RNTmodule** (SCK\_ENABLED)

- \* \documents and settings\\RNT\- \* user interface for spellchecking engine

**ssceXX.tlx, ssceXX2.clx, correctXX.tlx** (where XX = language, American English = ssceam.tlx)

- \* \documents and settings\\RNT\- \* language specific dictionaries used by spellchecking engine

**userdic.tlx**

- \* \documents and settings\\RNT\- \* site specific common dictionary used by spellchecking engine
- \* can be edited from file manager
- \* redownloaded next time user logs into site if it has been updated

**localdic.tlx**

- \* \documents and settings\\RNT\- \* created when using "Add to Dictionary" functionality in the SpellChecker.

**.NET components:****Rnt.General.Dialogs.DLL**

- \* collection of dialog windows

**Rnt.General.Data.DLL**

- \* handles retrieval and display of data stored in RightNow databases

**Rnt.General.Controls.DLL**

- \* extended Windows form elements (for use with Rnt.General.Data.DLL and Rnt.General.Dialogs.DLL)

**Rnt.General.Controls.Grid.DLL**

- \* general purpose grid control
- \* currently used in CTI
- \* will eventually replace of dynamic html grids on other pages

**Rnt.General.CGTK.DLL**

- \* graphics library
- \* supports SVG (XML based graphics format)
- \* uses GDI+

**Rnt.General.Canvas.DLL**

- \* graphical WYSIWYG flowchart editor
- \* currently used in Campaign Editor
- \* will be used in future Workflow Editor

**Rnt.MA.CampaignWindow.DLL** (MOD\_MA\_ENABLED)

- \* marketing automation main window

**Rnt.MA.CampaignEditor.DLL** (MOD\_MA\_ENABLED)

- \* marketing automation campaign editor

**Rnt.MA.DocumentEditorUtil.DLL** (MOD\_MA\_ENABLED)

\* XML document validator

**Rnt.CTI.CTIModule.DLL** (MOD\_CTI\_ENABLED)

\* CTI grid and call integration control

**Rnt.General.Logging.DLL**

\* error logging utility

**log4net.DLL**

\* third-party logging utility used by Rnt.General.Logging.DLL