

R-1

Deployment Platform

File Specification Guide

Software Version 5.0

For Windows/UNIX operating systems

May 9, 2011

Copyright © 2011 RepliWeb® Inc., All Rights Reserved

The information in this manual has been compiled with care, but RepliWeb, Inc. makes no warranties as to its accuracy or completeness. The software described herein may be changed or enhanced from time to time. This information does not constitute a commitment or representation by RepliWeb and is subject to change without notice. The software described in this document is furnished under license and may be used and/or copied only in accordance with the terms of this license and the End User License Agreement.

No part of this manual may be reproduced or transmitted, in any form, by any means (electronic, photocopying, recording or otherwise) without the express written consent of RepliWeb, Inc.

Windows, Windows XP and Windows Vista are trademarks of Microsoft Corporation in the US and/or other countries. UNIX is a registered trademark of Bell Laboratories licensed to X/OPEN.

Any other product or company names referred to in this document may be the trademarks of their respective owners.

Please direct correspondence or inquiries to:

RepliWeb, Inc.
6441 Lyons Road
Coconut Creek, Florida 33073
USA

Telephone: (954) 946-2274
Fax: (954) 337-6424

Sales & General Information: info@repliweb.com
Documentation: docs@repliweb.com
Technical Support: <http://support.repliweb.com>
Website: <http://www.repliweb.com>

Table of Contents

| | | |
|-----------|--|-----------|
| 1. | Overview | 1 |
| | Target Directories | 1 |
| 2. | Specifications | 2 |
| | Definitions | 3 |
| | Specifying Directories | 3 |
| | Specifying Files | 4 |
| | Examples | 5 |
| | Include Examples | 6 |
| | Exclude Examples..... | 7 |
| | Combined Include/Exclude Filter | 7 |
| 3. | GUI..... | 8 |
| 4. | CLI | 9 |
| | Include Examples | 9 |
| | Exclude Examples | 10 |
| 5. | Conversions..... | 11 |
| 6. | Automatic Exclude Filters..... | 12 |
| 7. | Advanced Examples..... | 13 |
| | Non-recursive Examples | 13 |
| | Partial and Full Recursive Examples..... | 14 |

1. Overview

NOTE: For brevity, the term “replication” stands for either replication and distribution processes, unless specified otherwise.

By default, during the replication process, R-1 synchronizes the entire directory structure (recursively from the source path) and all of its contents.

A given replication process may require you to exclude certain files or directories, or specify specific file types to transfer. The most common scenario includes system-specific temporary and log files that should not be replicated to the target node(s). R-1 enables the filtering of files and/or directories from the replication process, by defining which files and/or directories to exclude, as well as specifying which files/directories from the source tree to include (i.e. transfer).

You can specify, in a single job, both the files to exclude and the files to include – the combination of these filter specifications will result in the list of files that will be transferred in the replication process.

To ensure that the filter specifications you defined will perform as expected, it is advised to use the **Preview snapshot results** feature for the first distribution.

NOTE: In a Distribution job, the filter is applied to all Edges. Files can be excluded from being distributed to **all** Edge(s); they cannot be excluded from the distribution to **specific** Edge(s) within a distribution job. The same applies for Include filters.

Target Directories

After replication, the content of the target directory depends on more than just the filters specified. It is affected by the replication logic, its content before the replication, and other job properties.

In Distribution jobs, the target directories on the different Edges may look different after the distribution job is complete, depending on their tree before the replication. However, the excluded files are excluded from the complete job, and these files will not be transferred to any of the target Edges.

As this document’s focus is on the filter, it ignores other factors while describing the target directory’s content, and concentrates more on which files and directories are transferred during the replication process, or excluded from it.

2. Specifications

There are two types of filters: Include and Exclude. You can specify multiple Include and Exclude filters within the same job. Each filter that you define consists of two parts – the **non-recursive** and **recursive** parts.

- **Non-recursive** – The “non-recursive” part can be thought of as a “base” specification. This is used to define a starting point for that particular Include or Exclude filter.
- **Recursive** – The recursive part can be thought of as a qualifier to be applied to that “base”, further controlling what is included or excluded from that base path.

For each filter defined, specify whether it applies to files, directories, or both:

- **Files** – Replicate only files matching this filter.
 - **Non-recursive** – Only files on the level specified will be replicated to the target.
 - **Recursive** – All files in the tree matching this filter will be replicated. Only source sub-directories that contain these files will be created on the target.
- **Directories** – Replicate only directories matching this filter.
 - **Non-recursive** – Only source directories on the level specified will be replicated to the target.
 - **Recursive** – All directories in the tree matching this filter will be replicated. Only source sub-directories that contain these directories will be created on the target.
- **All** – Replicate all files and directories matching this filter.
 - **Non-recursive** – Only files and directories on the level specified will be replicated to the target.
 - **Recursive** – All files and directories in the tree matching this filter will be replicated. Only source sub-directories that contain these files and directories will be created on the target.

NOTE: As all file filters are relative to the source directory, when specifying directory names, do not specify a \ (for Windows) or a / (for UNIX) before the directory name.

- Excluding a directory means to exclude the directory and all the files and directories within that directory.
- Including a directory means to include the directory and all the files and sub-directories within that directory, and not other files and directories”.
- **Include filter - Recursive and Non-recursive directory** – includes all directories that match the filter criteria.
- **Exclude filter - Non-recursive directory** – excludes all files and directories under the directory specified.

Specifying Files

NOTE: Using * as the exclude filter will result in all files in the source directory being excluded from the replication.

NOTE: If both Recursive and Non-recursive specifications are made **in the same** Include/Exclude row, and the Non-recursive specification is a file, R-1 will interpret the Non-recursive specification as the base directory of the Recursive specification and add a directory separator to it. For example, if you specify Non-recursive file "filename.txt" and Recursive file "*.doc" in the same row, the Non-recursive entry will change to "filename.txt\".

File filters may include wildcards and multiple sub-directories:

| Non-recursive part | Recursive part |
|------------------------------------|----------------|
| filename.txt | filename.txt |
| directoryname\sub_directory\file.* | |
| directory*/sub*/ | f?.* |
| directory/ | sub/* |

Using the **GUI**, browse for or specify the **Files** you want to filter.

- **Exclude filter - file** – Using a file filter, no directories will be excluded. The entire directory tree starting from the specified path will be created on the target. All files in the path matching the file filter will also be excluded.
- **Exclude filter - Recursive file** – All files matching the file filter in the path specified and in all sub-directories **under** it will be excluded. No directories will be excluded, and the entire path will be created on target.
- **Include filter - file** – If the file filter is in a sub-directory, the complete path to the files in the filter specified will be created on the target (i.e. all the sub-directories in the path will be included). All files in the path matching the filter will also be included.

NOTE: Directories that are not in the specified path will not be created on the target.

- **Include filter - Recursive file** – All files matching the file filter in the path specified and in all the sub-directories **under** it are included, except empty directories.

Include Examples

Basic Files and Directories

If you include:

- All files under the `data\` directory.

The job properties will include:

| Non-recursive part | Recursive part | Includes |
|--------------------|----------------|----------|
| <code>data\</code> | <code>*</code> | Files |

Files transferred:

- ALL files and directories beneath the `data\` directory, except empty directories.

To also include empty directories:

| Non-recursive part | Recursive part | Includes |
|--------------------|----------------|----------|
| <code>data\</code> | <code>*</code> | All |

Recursive Multi-Level Directories

If you include:

- All the `*.doc` files residing in all `data\summary` directories within `C:\Master_data\`

The job properties will include:

| Non-recursive part | Recursive part | Includes |
|--------------------|---------------------------------|----------|
| | <code>data\summary*.doc</code> | Files |

Files transferred:

- `C:\Master_data\data\summary*.doc`
- `C:\Master_data\data\summary\data*.doc`
- `C:\Master_data\2002\data\summary*.doc`
- `C:\Master_data\2002\data\summary\data*.doc`

Recursive and Non-recursive Multi-Level Directories

If you include:

- All the `*.doc` files residing in all `data\summary` directories within `C:\Master_data\`
- The `Server.log` file from the source directory

The job properties will include:

| Non-recursive part | Recursive part | Includes |
|-------------------------|---------------------------------|----------|
| <code>2002\</code> | <code>data\summary*.doc</code> | Files |
| <code>Server.log</code> | | Files |

Files transferred:

- `C:\Master_data\2002\data\summary*.doc`
- `C:\Master_data\2002\data\summary\data*.doc`

Exclude Examples

Simple Files and Directories

If you exclude:

- C:\Master_data\server.log
- The C:\Master_data\2002\logs directory and everything under it

The job properties will exclude:

| Non-recursive part | Recursive part | Includes |
|--------------------|----------------|----------|
| server.log | | Files |
| 2002\logs\ | | All |

Recursive Files and Directories

If you exclude:

- All files with a tmp extension throughout the source directory tree
- All logs directories within C:\Master_data and everything inside them

The job properties will exclude:

| Non-recursive part | Recursive part | Includes |
|--------------------|----------------|-------------|
| | *.tmp | Files |
| | logs\ | Directories |

Combined Include/Exclude Filter

If you:

- Publish an update for a Web Site, update all files and sub-directories in the \html and \images sub-directories, but exclude all the *.tmp files in these directories and all the _vti_* files and directories.

The job properties will include:

| Non-recursive part | Recursive part | Includes |
|--------------------|----------------|----------|
| html\ | | All |
| images\ | | All |

The job properties will exclude:

| Non-recursive part | Recursive part | Includes |
|--------------------|----------------|----------|
| | *.tmp | Files |
| | _vti_* | All |

3. GUI

The Files tab contains two sub-tabs that look identical: Include and Exclude. Using these tabs, you can enter the desired filters for each.

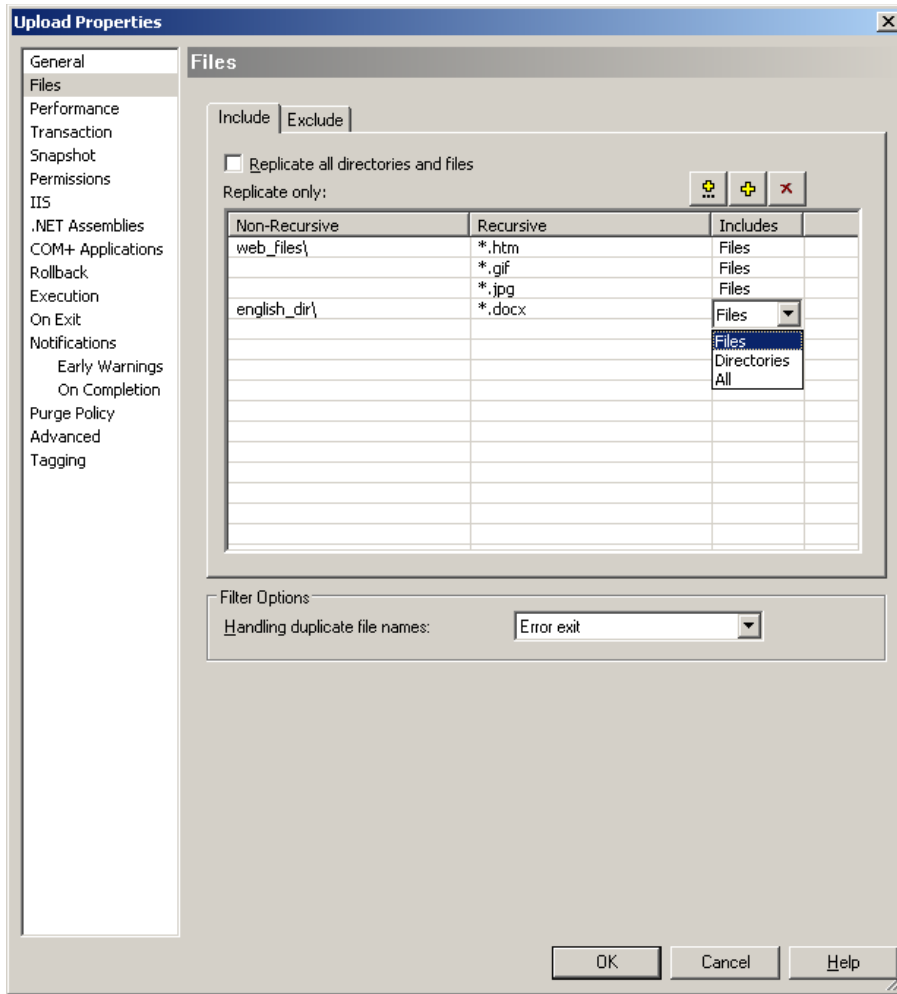


Figure – New File Specification Screen

4. CLI

The command line is also changed to reflect the change of the Include / Exclude behavior.

NOTE: Filters may include a non-recursive and recursive part, separated by a comma.

```
-include_files="[non-recursive part, recursive part], [non-recursive part, recursive part], ...\  
-exclude_files="[non-recursive part, recursive part], [non-recursive part, recursive part],...\  
"
```

The square brackets indicate an item in the list. Each item contains two parts: non-recursive and recursive. The comma must reside even if one of the parts is not defined.

Include Examples

```
>r1 submit ... -noall_files -include_files="[*.doc,], [english\, *.htm],  
[,index.htm]"
```

Include “Files” Example

The following command includes all files under `english` directory.

```
>r1 submit ... -noall_files -include_files="[english\,]"
```

Include “Directories” Example

The following command includes all directories under `english` directory.

```
>r1 submit ... -noall_files -include_files="[english\\,]"
```

Include “All” Example

The following command includes all files and directories under `english` directory.

```
>r1 submit ... -noall_files -include_files="[english\,*]"
```

Exclude Examples

```
>r1 submit ... -exclude_files="\[*tmp,], [\*vti*,*]"
```

Exclude “Files” Example

The following command excludes all files under `english` directory.

```
>r1 submit ... -exclude_files="[english\,]"
```

Exclude “Directories” Example

The following command excludes all directories under `english` directory.

```
>r1 submit ... -exclude_files="[english\\,]"
```

Exclude “All” Example

The following command excludes all files and directories under `english` directory.

```
>r1 submit ... -exclude_files="[english\,*]"
```

5. Conversions

Some file specifications that cannot be automatically converted:

- The recursive part may contain only one level if both non-recursive and recursive parts exist (either a file name or a directory name):

| Non-recursive part | Recursive part |
|--------------------|------------------|
| a\ a\b\ | b\file.txt *\ |

- **File Specification ending with a directory separator should be specified both as a file and as a directory:**

| Non-recursive part | Recursive part |
|--------------------|----------------|
| a\b\c\ a\ | |

Previous RDS and R-1 versions acted the same on files and directories: in this example **ALL files and directories named c would have been transferred**. In newer versions, files will not be transferred if marked as directories. To transfer all files and directories named c using a mixed versions environment, the File Specification should be: a\b\c.

- **The non-recursive part should end with a directory separator** (when a recursive part exists):

| Non-recursive part | Recursive part |
|--------------------|----------------|
| a\b\c | file.txt |

The combination of the non-recursive part and the recursive part should be a valid file specification.

- **Exclude File Specification should contain both file and directory specifications:**

| Non-recursive part | Recursive part |
|--------------------|----------------|
| *c | |

To exclude all files and directories ending with c, the correct spec is:

| Non-recursive part | Recursive part |
|--------------------|----------------|
| *c *c\ | |

6. Automatic Exclude Filters

Based on user filter settings, R-1 may automatically exclude files during the Distribution process:

- Files that could not be accessed during the snapshot generation phase will be listed in the **Exclude** report.
- During the Snapshot Generation phase, files are accessed for retrieving details only. If the user has access to retrieve details of these files, the job will pass this phase successfully. However, if the user does not have access to read or delete these files, the job will fail at the Transfer stage.

To overcome access problems at the Transfer stage, uncheck the **Abort on error transferring files** option.

- **Ignore hidden files on UNIX** – Exclude files beginning with a period.
- **Ignore invalid Windows file names** – If the source is UNIX and the target is Windows, UNIX files whose names include invalid characters in Windows will not be transferred. (If this option is not selected and files of that kind exist, the job will fail.)

7. Advanced Examples

Non-recursive Examples

| # | Non-recursive part | Recursive part (N/A) | Included Directories | Excluded Directories | Include files | Exclude files |
|---|--------------------|----------------------|--|---|---|--|
| 1 | /a/b/*.c | | /a and /a/b | No directories are excluded | All files under /a/b/ that match *.c | Same as include |
| 2 | /a/b*/* | | /a/ and directories that match /a/b* | No directories are excluded. | All files under directories that match /a/b* | Same as include |
| 3 | /a/b*/*.c | | /a and directories under /a that start with b | No directories are excluded | All files, under directories that match /a/b*, that end with '.c'. | Same as include |
| 4 | /a*/b/file1 | | Directories that match /a*/ and /a*/b | No directories are excluded | Files named file1 under /a*/b | Same as include. |
| 5 | /a/b/*c/ | | /a, /a/b and /a/b/*c | Directories under /a/b/ that match *c and all the directories under them (all levels). | Files immediately under the directories that are included. | Files under the directories that are excluded (all levels). |
| 6 | /a/b*/*/ | | /a/ and directories that match /a/b* and directories one level under them. | Directories under directories that match /a/b*/. | All files under directories /a/b*/ */ only one level (such as /a/bv/c/f1) | Files under directories /a/b*/*/ (at all levels)/a/bc/d/f1 and /a/bb/d/e/f2 but not /a/bb/f3). |
| 7 | /a/b*/*.c/ | | /a, /a/b*/, directories under these that match *.c | Directories that match at all three levels and all directories under them. (No directories no first and second level) | All files, under directories that match /a/b*/*.c/ (one level) | Files at all levels under directories matching all three levels /a/b*/*.c/ |
| 8 | * | | No directories are included. | Same as include. | All files directly under the source directory. | Same as include. |

| # | Non-recursive part | Recursive part (N/A) | Included Directories | Excluded Directories | Include files | Exclude files |
|---|--------------------|----------------------|--|--|------------------------|-----------------------------------|
| 9 | */ | | All directories directly under the source directory. | All directories in all levels under the source directory (All directories directly under the source directory and all directories under them). | No files are included. | Files under excluded directories. |

Partial and Full Recursive Examples

| # | Non-recursive part | Recursive part | Include Directories | Exclude Directories | Include files | Exclude files |
|----|--------------------|----------------|---|---|--|---|
| 10 | /a/b/ | *.c | /a and /a/b and all directories under /a/b/ that contain *.c files. | No directories are excluded | All files at any level under /a/b/ that match *.c | Same as include |
| 11 | /a/b*/ | * | /a/ , directories that match /a/b* and all directories under /a/b*/ | No directories are excluded. | All files, at any level, under directories that match /a/b* | Same as include |
| 12 | /a/ | b*/*.c | /a, directories that match /a/b* and contain *.c files. | No directories are excluded | All files, at any level, under directories that match /a/b*, that end with '.c'. | Same as include |
| 13 | | /a*/b/file1 | Directories that match /a*/, /a*/b and all directories under /a*/b/ that contain file1. | No directories are excluded | Files named file1, at all levels, under /a*/b | Same as include. |
| 14 | /a/b/ | *c/ | /a, /a/b and all directories under /a/b/ that match *c/ | Directories at all levels under /a/b/ that match *c | Files at all levels under directories that match *c and located anywhere under /a/b/ | Files under the directories that are excluded (all levels). |
| 15 | /a/ | b*/*/ | /a/, directories that match /a/b*/ and all directories one level under them. | Directories one level under /a/b*/ | Actually all files under directories /a/b*/*/ (all levels) | Files under the directories that are excluded (all levels). (a/bd/r/f1 a/bd/f/f/f2 but not a/bd/f3) |

| # | Non-recursive part | Recursive part | Include Directories | Exclude Directories | Include files | Exclude files |
|----|--------------------|----------------|--|--|--|---|
| 16 | | /a/b*/*.c/ | /a, directories that match /a/b*/ and all directories under them. | Directories at all levels under /a/b*/ that match *.c and all the directories under them (all levels). | Files at all levels under directories that match *.c and located anywhere under /a/b*/ | Files under the directories that are excluded (all levels). |
| 17 | | * | No directories are included. | Same as include. | All files in all levels under the source directory. | Same as include. |
| 18 | | */ | All directories in all levels under the source directory. | Same as include. | No files are included. | All files under excluded directories. |
| 19 | */ | * | No directories are included | Same as include. | All files at all levels under directories that are directly under the source directory | Same as include |
| 20 | */ | */ | All directories at all levels under directories that are directly under the source directory | Same as include. | No files are included. | All files under excluded directories. |
| 21 | * | * | Illegal spec – unexpected behavior – the non-recursive part of the spec must end with a dir separator. | | | |
| 22 | * | */ | Illegal spec – unexpected behavior – the non-recursive part of the spec must end with a dir separator. | | | |
| 23 | /a/b | *c/ | Illegal spec – unexpected behavior – the non-recursive part of the spec must end with a dir separator. | | | |

For any additional information, please contact us at support.repliweb.com