



ENOVIA SmarTeam

Multi-site RepliWeb Installation and Configuration Guide

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Chapter 1: Introduction

This document describes what RepliWeb® Deployment Suite (RDS) is and how to successfully install and configure it in a SmarTeam – Multi-site system.

This document is divided into the following sections:

- ❑ [System Requirements](#)
- ❑ [RDS Installation Process](#)
- ❑ [Configuring a Replication Job](#)
- ❑ [Submitting Replication Jobs](#)
- ❑ [Post Installation Process](#)
- ❑ [Troubleshooting](#).

Software Location

The RepliWeb® Deployment Suite Installation is available at support.smarteam.com.

The installation procedures described is for the following SmarTeam – Multi-site software, which is available on the SmarTeam CD-ROM.

Related Documentation

For an overall successful implementation, you are advised to read the SmarTeam – Multi-site Administration Guide Part III: Vault Replication provided on the SmarTeam Documentation CD – CD10 before attempting this installation procedure. See also SM SmarTeam – Multi-site Methodology Guide.

The following documents are referred to in this guide. All of these documents are available on the SmarTeam Program Directory CD.

Name of Document	Remarks
SmarTeam Multi-site Installation Guide	The SmarTeam Multi-site Installation Guide provides a step-by-step guide for installing the Multi-site system
SmarTeam Multi-site Administration Guide	The SmarTeam Multi-site Administration Guide provides an introduction to the various administration procedures to successfully setup, customize and maintain a SmarTeam - Multi-site system in a corporate environment
SmarTeam Multi-site Methodology Guide	SmarTeam Multi-site Methodology Guide allows you to successfully use SmarTeam – Multi-site as your enterprise solution. The SmarTeam Multi-site Methodology Guide is part of the SmarTeam Documentation CD – CD10. There you can find best practices for SmarTeam – Multi-site systems
Oracle 10g Installation Guide	Oracle 10g Installation Guide outlines the procedures required to install an Oracle Server and Oracle Client for the SmarTeam environment
SmarTeam – Multi-site DBSITEMANAGER On-line Help	An On-line help detailing: <ul style="list-style-type: none">• Asynchronous data sharing• Instant ability to work simultaneously on shared projects• Periodic replications to synchronize the two databases.

Notes: All the documentation mentioned in this document, unless specified otherwise, is available on the SmarTeam Documentation CD.

Internet Site

You are highly recommended to frequently visit our website for the latest updates and plug-in products, including the latest Service Packs, Hotfixes and technical support at <http://www.3ds.com/support>.

In addition, you will also be able to view any installation known issues.

Chapter 2: Installation Checklist

You must complete all the stages in this checklist to successfully install SmarTeam – Multi-site.

*Requirement: M = Mandatory, O = Optional

	Item	M/O*	Reference
Stage 1: Pre Installation			
<input type="checkbox"/>	Verify that your Hardware meet the Multi-site requirements	M	SmarTeam Hardware and Software Requirements document
<input type="checkbox"/>	Verify that your RDS software meets the Multi-site environment requirement	M	SmarTeam – Multi-site RepliWeb Implementation Guide (RepliWeb Installation Environment)
<input type="checkbox"/>	Verify that you have the required SmarTeam – Editor software installed on your system	M	SmarTeam Hardware and Software Requirements, and SmarTeam – Multi-site Installation Guide documents
<input type="checkbox"/>	Check for any additional prerequisites on the SmarTeam Web Site	M	Release Notes of Latest Service Pack in the Release or SmarTeam Support Site
Stage 2: Installation Process			
<input type="checkbox"/>	Run the RDS Installation	M	RDS Installation Process
Stage 3: How to Configure a Replication Job			
<input type="checkbox"/>	Configure the RDS for Replicating Jobs	M	Configuring a Replication Job
<input type="checkbox"/>	Specifying the Controller User	M	Specifying the Controller User
<input type="checkbox"/>	Creating an Upload Job	M	Creating an Upload Job
<input type="checkbox"/>	Saving the Template	M	Saving the Template
<input type="checkbox"/>	Creating an Upload Job for a Redline File Replication	M	Creating an Upload Job for RedLine File Replication
Stage 4: How to Submit a Replication Job			
<input type="checkbox"/>	How to Submit a Replication Job	M	Submitting Replication Jobs
Stage 3: Post Installation Process			
<input type="checkbox"/>	Improving RepliWeb Performance	O	Utilizing the RepliWeb Compression feature
<input type="checkbox"/>	Utilizing RepliWeb Compression Feature	O	Invoking Compression feature

Chapter 3: System Requirements

Order of Installation

Refer to [Chapter 2: Installation Checklist](#) for a detailed list of all the steps that need to be performed.

The installation procedure is split into five stages:

Stage 1: System Requirements (This chapter)

Stage 2: [RDS Installation Process](#)

Stage 3: [Configuring a Replication Job](#)

Stage 4: [Submitting Replication Jobs](#)

Stage 5: [Post Installation Process](#)

For a successful installation you must complete one stage before proceeding to the next stage.

RepliWeb Installation Environment

Vault Replication assist SmarTeam – Editor operation. For example, if a required file is in the working directory of a remote site, SmarTeam – Editor is directed to access that file in a mirror directory in the local computer.

The three stages for Setting up Vault Replication in a SmarTeam – Multi-site system are:

- **Vault Configuration** – Defines and configures vault servers and vaults for each site that participates in vault replication.
- **Vault Replication** – Defines the logical organization of the Vault Configuration into operational vault groups that corresponds to the following life-cycle states, CheckIn, Obsolete and Released. The vault groups so defined allow an application to quickly locate a local mirror directory that contains a copy of a desired remote file.
- **Actual Copying of Files** – The actual replication or copying of files from the working to mirror directory is not supported by SmarTeam software. Rather, the user can choose from several available software options for this job, for example, the RepliWeb Deployment Suite® (RDS) software discussed in this document.

This document assumes that you have carried out the first two steps for your SmarTeam – Multi-site system, as described in the document SmarTeam – Multi-site Administration Guide Part IV: Vault Replication.

This document shows how to configure RepliWeb Deployment Suite® (RDS) Software for the third step of actual periodic copying of files from source to mirror directories.

RepliWeb with Firewall

By default, ports 2837 and 5745 are opened.

When using Oracle, the situation is more complex. Oracle uses dynamic ports, so you may need to do some adjustments to make it work with firewalls, depending on your environment.

- **Windows Environment** - If you are using Windows, and your firewall is just for port restriction, use: USE_SHARED_SOCKET=YES registry parameter.
- **Firewall with Proxy, Reverse Proxy and so on** - This will require so-called Connection Manager and a special complex procedure.

RepliWeb Deployment Suite[®] (RDS) Software

RDS can define a replication association (Replication Job) between a source directory and a target directory, whereby files in the source directory are copied to the target directory with a frequency determined by the user. Properties can be defined for each replication job, such as excluding files types from replication (Exclude property) and whether to overwrite existing files in the target directory (Logic property).

RDS uses two components, Controller and Satellite, to control data transfer. In the “push” replication used in SmarTeam – Multi-site Vault Replication, the Controller is installed in the computer with the source (working) directory and the Satellite data is installed in the computer with the target (mirror) directory.

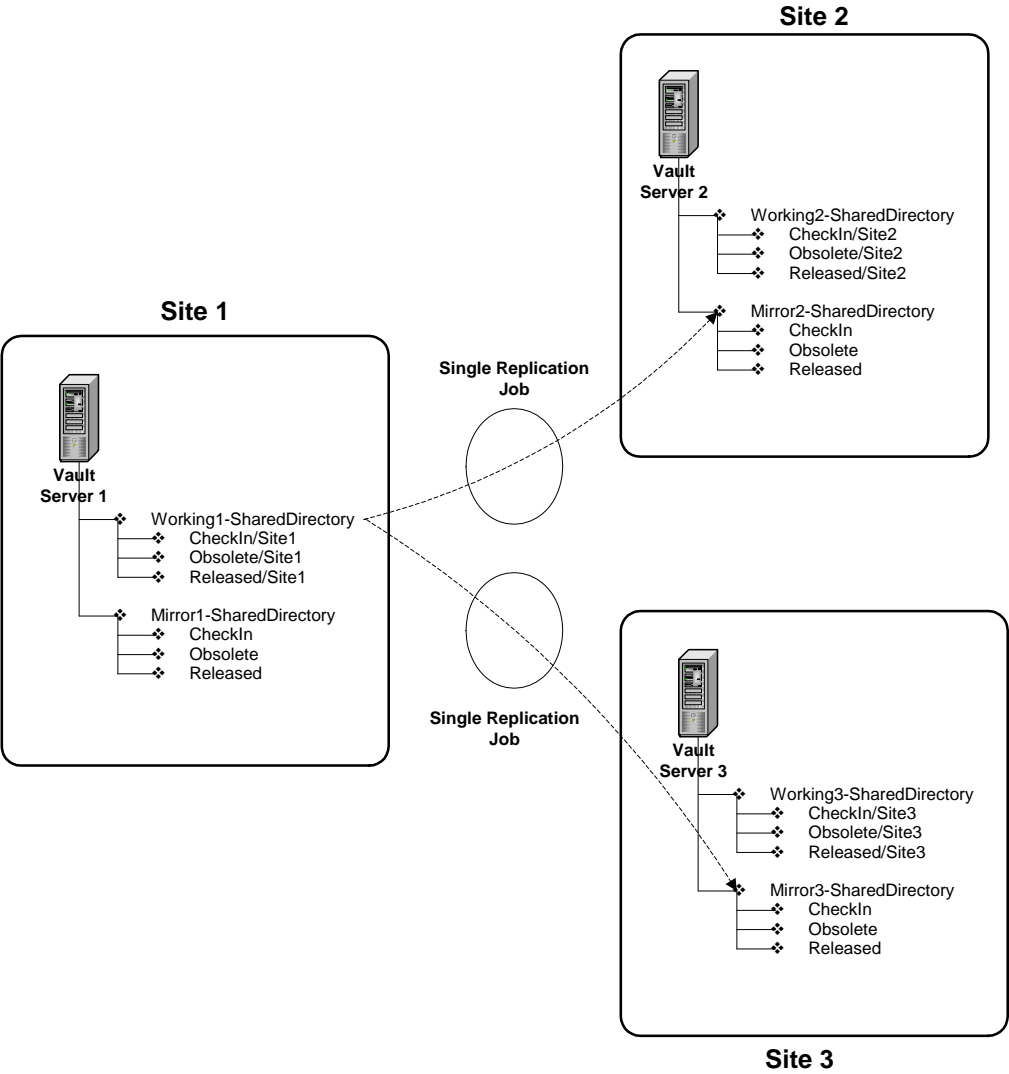
This Multi-site Installation and Configuration Guide is relevant for RepliWeb Version 2.6.

Defining Replication Jobs

Because the SmarTeam – Multi-site environment works with “push” replication, you configure replication jobs as Upload Jobs, from a local working directory to a remote mirror directory. Since each Vault Server has both working and mirror directories, you need to install both Controller and Satellite components on each computer.

The same SmarTeam software, `VaultSetup.exe`, that you use to configure vaults for vault replication, produces a report that includes all working/mirror directory pairs for which replication jobs need to be defined in RDS (or in any other replication software).

The figure below shows Vault Replication in a three-site SmarTeam – Multi-site system which has been set up according to the procedure defined in SmarTeam – Multi-site Administration Guide Part IV: Vault Replication. The figure shows the two jobs required to replicate all vaults in the Working Shared Directory of Site 1 to their respective mirror sites. Each replication job is represented by a dashed line. Similar Replication jobs need to be defined for the other two sites. The procedure for setting up these jobs is discussed below.



Replication Jobs in a Multi-site Vault Replication

The following is a complete list of the working/mirror directory pairs for which Replication Jobs need to be defined for the system shown in the figure, as defined in SmarTeam – Multi-site Administration Guide Part IV: Vault Replication. As mentioned, this information is in the Vault Replication Report provided by the SmarTeam software `VaultSetup.exe`.

[Site 1]

1. <Vault Server-Site 1>\Working1-SharedDirectory→
 <Vault Server-Site 2>\Mirror2-SharedDirectory
2. <Vault Server-Site 1>\Working1-SharedDirectory →
 <Vault Server-Site 2>\Mirror3-SharedDirectory

[Site 2]

3. <Vault Server-Site 2>\Working2-SharedDirectory→
 <Vault Server-Site 1>\Mirror1-SharedDirectory
4. <Vault Server-Site 2>\Working2-SharedDirectory →
 <Vault Server-Site 3>\Mirror3-SharedDirectory

[Site 3]

5. <Vault Server-Site 3>\Working3-SharedDirectory→
 <Vault Server-Site 2>\Mirror2-SharedDirectory
6. <Vault Server-Site 3>\Working3-SharedDirectory→
 <Vault Server-Site 1>\Mirror1-SharedDirectory

Chapter 4: RDS Installation Process

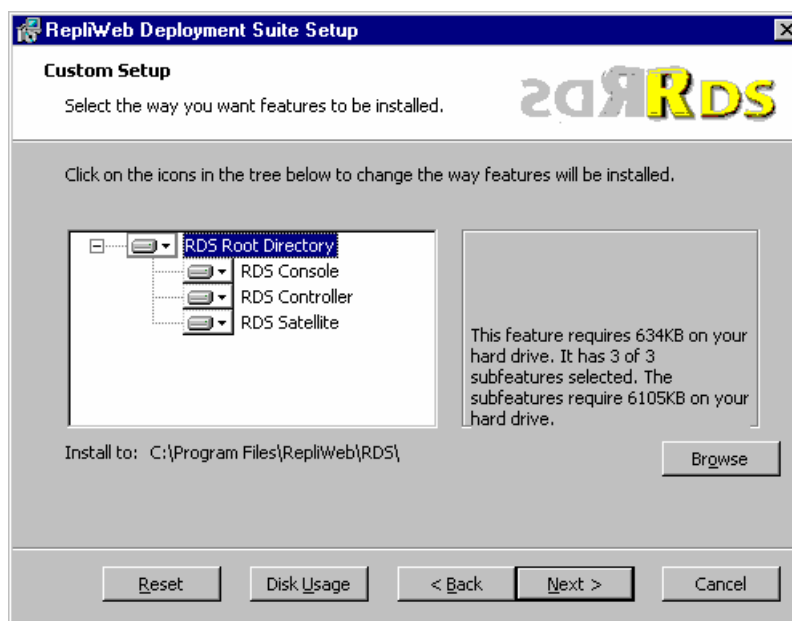
This section shows how to install the RDS software for use in a SmarTeam – Multi-site Vault Replication.

You install RDS at each server located at the Vault Server that participates in the Vault Replication. For each installation, you need to include the following three components:

- RDS Console
- RDS Controller
- RDS Satellite.

To install RDS perform the following steps:

1. Follow the installation instructions until you get the window Custom Setup, shown below:



2. Select all the components as shown, and click **Next**.
3. Complete the installation according to the instructions.

Chapter 5: Configuring a Replication Job

This section describes how to configure an Upload Replication Job in RDS for a SmarTeam – Multi-site system. As mentioned above, an Upload Replication Job defines replication for a single working/mirror directory pair.

Note: For an explanation on replicating a vault locally, see SmarTeam – Multi-site Administration Guide, Accessing Remote Files Locally.

In general, the procedure for configuring Vault Replication is:

- Define all individual Upload Jobs in the system
- Save each Upload Job in a Template
- Group the Templates into a Container (optional)
- Submit all Templates (or submit the Container).

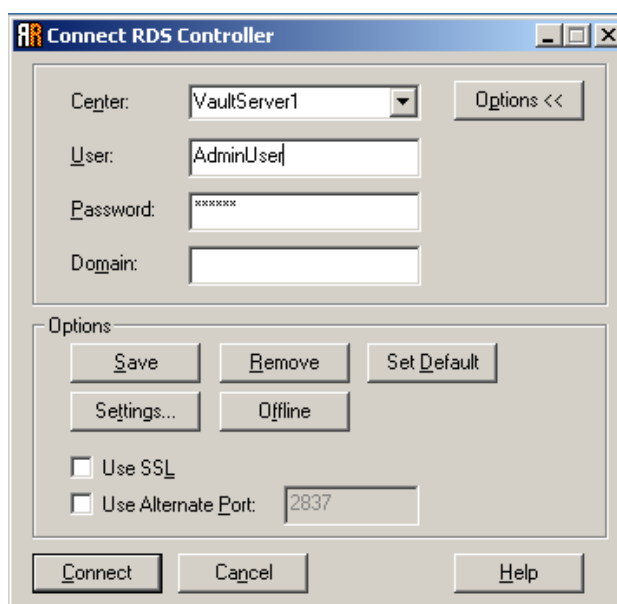
Specifying the Controller User

This section describes how to specify the user under which the RDS Controller will operate. You need to specify a user that has read/write permission on all vaults. It is recommended to specify the Vault Server Administrator user.

1. Launch RDS as follows:

Start -> Programs -> [RepliWeb RDS menu] -> RDS Console

The Connect RDS Controller window appears with the options shown below:



- ❑ **Center** – Enter the Host Name or IP address of the RDS Controller
 - ❑ **User** – Enter the user name that all jobs on the Controller will use to perform the replication
 - ❑ **Password** – Enter the password for the user specified in the **User** field
 - ❑ **Domain** – If **User** is part of a domain, enter the domain here, if it is not, leave this field blank.
2. Fill in the fields and click **Connect**.

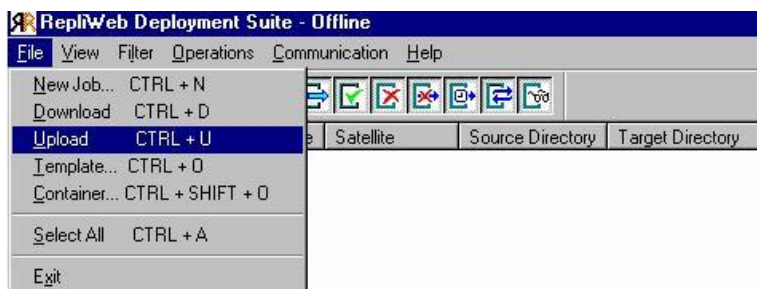
The RepliWeb Deployment Suite window is displayed.

Creating an Upload Job

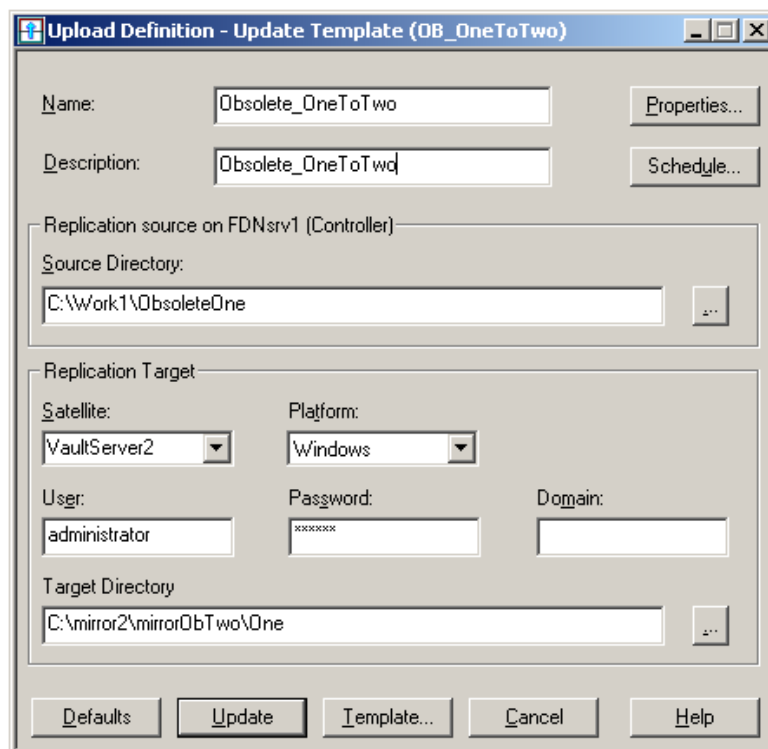
This section describes how to define an Upload Job, which corresponds to an individual replication correspondence between a working shared directory and a destination mirror shared directory. You need to define a separate Upload Job for each working/mirror directory pair in the Vault Replication. You can save each Upload Job definition in a Template and group the Templates into a Container for future submission.

Note: The Upload Job defined in this section is for non-RedLine files only. The Upload Job for RedLine files is defined in the section [Creating an Upload Job for RedLine File Replication](#).

1. In the RepliWeb Deployment Suite window select **File -> Upload**, shown below.



The Upload Job Definition window, enter the following options described below:



- ❑ **Name** – Enter a name for the Replication under this job
- ❑ **Description** – Enter description text.

Replication Source

The correct path for both source and target is specified by the combination of host name or IP address and local path on that computer. You should not use an UNC format such as \\computer_name\...

- ❑ **Source Directory:** The RDS controller host name is automatically used as the host name of the source. Enter the path name only for the Upload Job source working directory, for example:

<Source Local Drive Name>\SmVault - Working

Replication Target

- ❑ **Satellite:** Enter the host name of the target site
- ❑ **Platform:** Enter the operating system on the target site
- ❑ **User:** Enter a user name for a user on the target site that has vault read/write privileges
- ❑ **Password:** Enter the password for the user specified in the **User** field
- ❑ **Domain:** If **User** is part of a domain, enter the domain here, if it is not, leave this field blank
- ❑ **Target Directory:** Enter the path name for the Upload Job target mirror directory, for example:

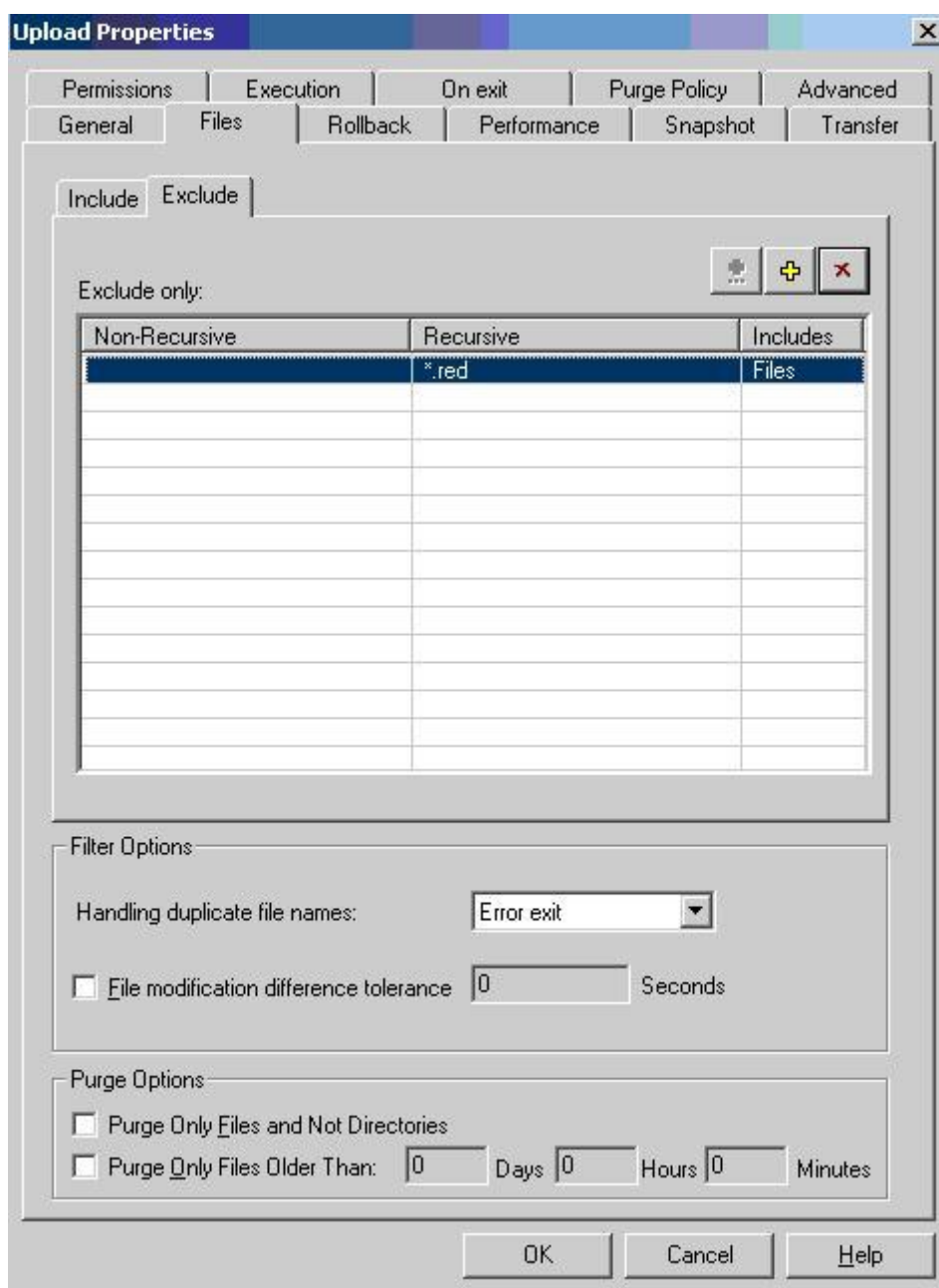
< Target Local Drive Name >\ SmVault - Mirror

(see [Defining Replication Jobs](#))

2. Fill in the details of the Upload Job Definition window.
3. Choose **Properties** to display the Upload Job Definition Options window.
4. From the **General** tab, check **Backup source**, and click **OK**.

The screenshot shows the 'Upload Properties' dialog box with the 'General' tab selected. The 'Synchronization Type' section has three radio buttons: 'Mirror source to target', 'Backup source' (which is selected), and 'Purge only'. The 'Recovery Options' section contains four input fields: 'Max Retries' (25), 'Retry Factor' (30 %), 'Base Interval' (10 Seconds), and 'Max Interval' (120 Seconds). The 'Time Tolerance' section has two rows of time inputs: 'Comparative Snapshot Valid For' (1 Hour 0 Minutes) and 'Pre Replication Commands Valid For' (1 Hour 20 Minutes). The 'Safety Options' section has two checkboxes: 'Abort on empty source' (checked) and 'Manually confirm comparative snapshot' (unchecked). The 'Report Options' section has a 'Transfer Report Style' dropdown menu set to 'Log'. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

5. Click the **Exclude** tab and enter "*.red" in the **File Specification** field. Click **Add** and select the **Recursive** check box to exclude the RedLine files from this job. Click **OK**.



6. In the Schedule tab, set the **Run every** field to determine the frequency of replication.

Schedule

Schedule Mode

☐ Run Once ☒ Scheduled

Important: All scheduled times refer to the time on the Controller [GMT+02:00]

Run Scheduled

☒ Run Every: 0 Days 0 Hours 10 Minutes

☐ Run Daily at:

☐ Run Weekly on:

☐ Run on Trigger File:

Job Priority

☒ Use Priority Level: 5

Execution Time Frame

☐ Use Time Frame

Job Termination

☐ Terminate After: 0 Days 0 Hours 0 Minutes

Supplementary Purge Policy

☒ Maximum archived instances: 10

Authorized Users

Users List

Authorized Groups

Groups List

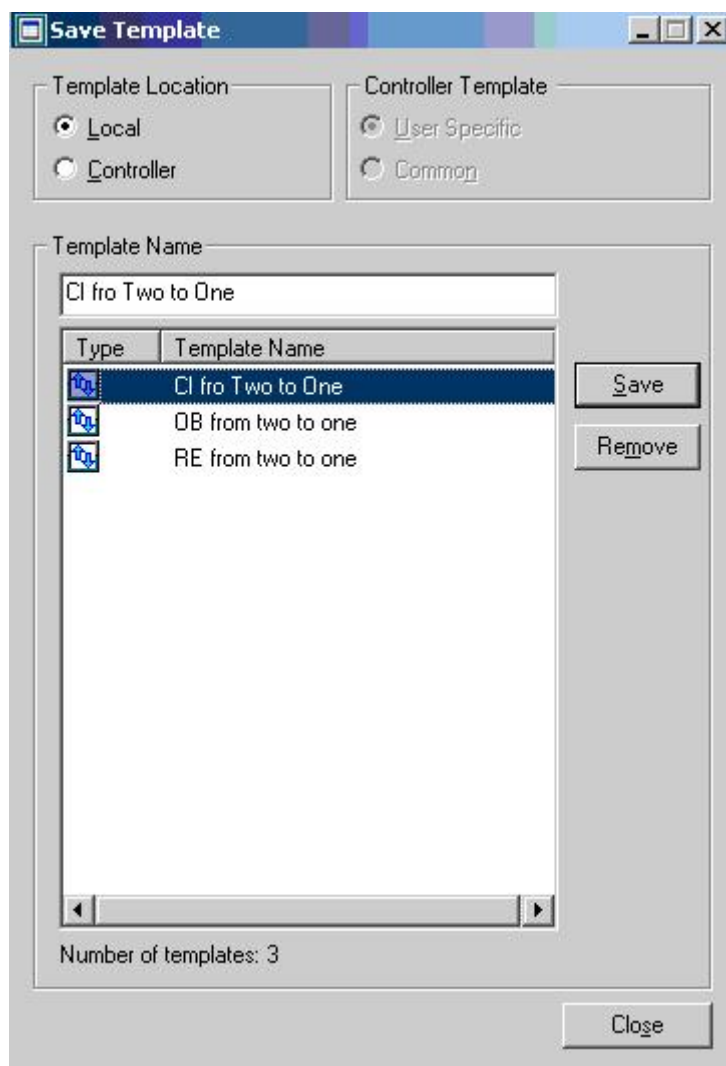
OK Cancel Help

7. Click Ok.

Saving the Template

In this section, you save the Upload Job definition you defined in the previous section in a Template for later submission.

1. In the Upload Job Definition screen, click **Template**.
2. In the Save Template dialog, enter a template name in the **Template name** field.
3. Choose **Save** to save the template.



Creating an Upload Job for RedLine File Replication

In this section you create an additional set of Upload jobs to handle RedLine files.

RedLine files need to be treated separately because a RedLine file can be updated by SmarTeam – Editor directly in a mirror directory. Thus it can happen that the latest version of the RedLine file is in the mirror directory and not in the source directory – or in mirror directories at other sites. When this occurs, the latest version of the RedLine file needs to be copied to the source directory and, from there, replicated to the mirror directories at other sites.

In order to handle this situation, the following approach is used:

- When the RedLine file is saved to the local directory, working or mirror, a script is activated by the SmarTeam – Editor script hook After On Saving RedLine.
- The script performs two tasks in the following sequence:
 - ❑ In the event that the RedLine file was saved to the local *mirror* directory, the script copies the RedLine file from there to the remote working directory corresponding to the local mirror directory.
 - ❑ Whether the RedLine file is saved to local working or mirror directory, the script creates a trigger file in the local Vault Server shared directory that initiates the RDS replication of all RedLine files; this replication transfers the new RedLine file from the source working directory to the mirror directories at other sites.

For the second task, you need to define a separate redline Upload Job for each working/mirror directory pair in the Vault Replication. You can save each Upload Job definition in a Template and optionally group the Templates into a Container for future submission.

Perform the following steps:

1. Perform steps 1-3 in the section [Creating an Upload Job](#).

From the **General** tab, check **Backup source**. Click **Ok**.

The screenshot shows the 'Upload Properties' dialog box with the 'General' tab selected. The 'Synchronization Type' section has three radio buttons: 'Mirror source to target', 'Backup source' (which is selected), and 'Purge only'. The 'Abort' section has three checkboxes: 'On error transferring files' (checked), 'On error deleting files' (unchecked), and 'On error accessing files during snapshot' (checked). The 'Recovery Options' section has four input fields: 'Max Retries' (25), 'Retry Factor' (30 %), 'Base Interval' (10 Seconds), and 'Max Interval' (120 Seconds). The 'Time Tolerance' section has two rows of input fields: 'Comparative Snapshot Valid For' (1 Hours, 0 Minutes) and 'Pre Replication Commands Valid For' (1 Hours, 20 Minutes). The 'Safety Options' section has two checkboxes: 'Abort on empty source' (checked) and 'Manually confirm comparative snapshot' (unchecked). The 'Report Options' section has a 'Transfer Report Style' dropdown menu set to 'Log'. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

2. In the Schedule tab, set the **Run on trigger file** field, and enter the path of the Trigger File in the field **Controller Trigger File**, as at right, and click **Ok**.

The trigger file, which is created by a script as described above, must be created in a shared directory of the local Vault Server and must have the path that you entered In the Schedule dialog.

Note: For systems involving three sites or more, a single trigger file will not suffice, since it is erased by the first replication job it initiates.

3. Write a script that performs the two tasks described above and install it in Script Maintenance, After On Saving RedLine.
4. In the Upload Job Definition window, select the **Options** tab.
5. Perform the steps in the section Saving the Template

Optionally, define a Container for all the Templates you have created until now.

Chapter 6: Submitting Replication Jobs

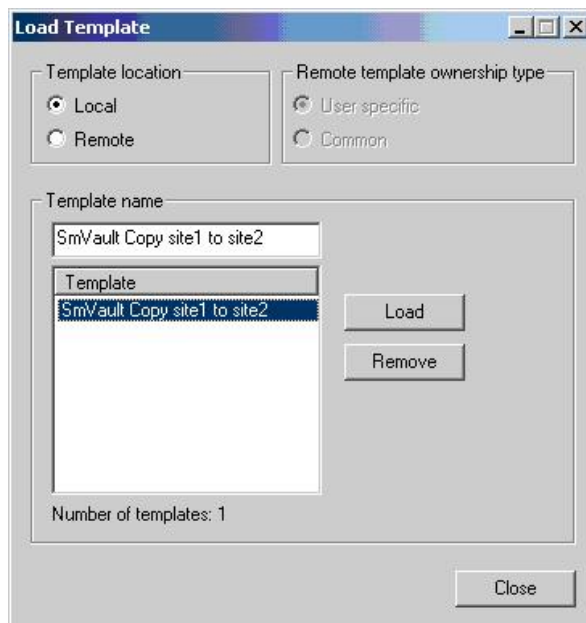
In this section, you submit the Upload Jobs you defined in the previous sections. Submitting the jobs initiates the Vault Replication.

You can either submit each Template individually, or you can submit the Container that contains them.

For example, to submit a Template:

1. In the RepliWeb Deployment Suite window, select **File, Template**.

The Load Template window is displayed.



2. Select a Template.

3. Click **Load**.

The Upload Job Definition window is displayed.

4. Click **Submit**.

5. In the same way, submit all Templates related to the Vault Replication.

Chapter 7: Post Installation Process

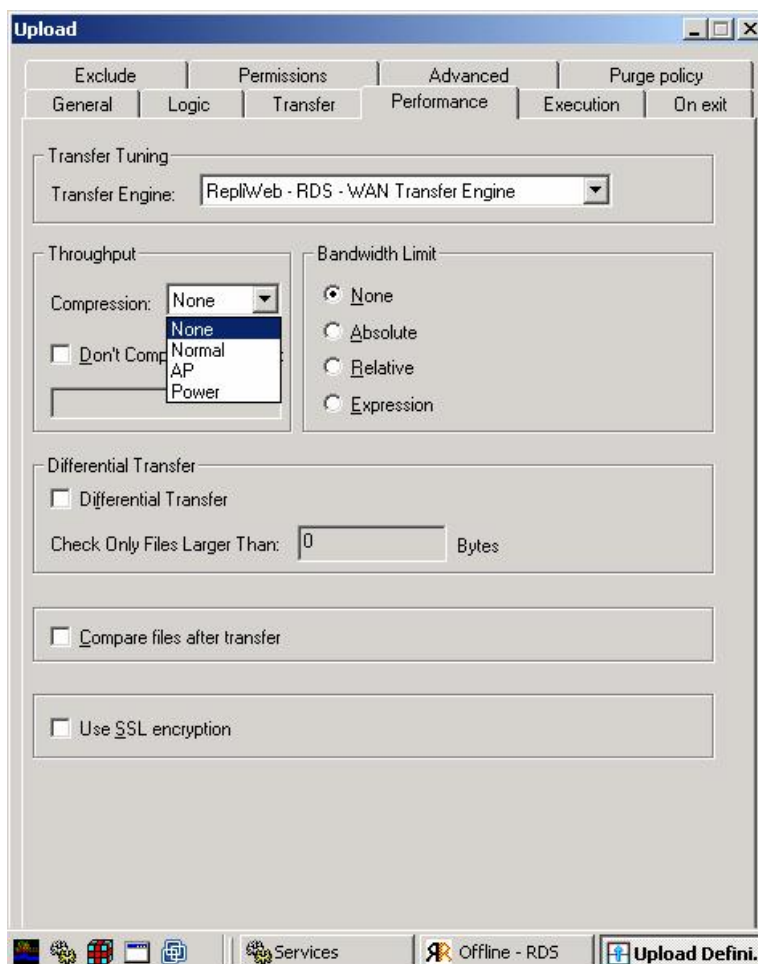
Improving RepliWeb Performance

Utilizing the RepliWeb Compression feature

Some SmarTeam – Multi-site/RepliWeb customers may experience performance issues with the RepliWeb while working on slow communication lines. RepliWeb possesses the “Compression” feature that is able to eliminate those issues, therefore showing good performance in low quality or heavy load environment. Compressing data before transfer significantly reduces size of the communication workload, although additional hardware resources for the processing computer are required.

Invoking Compression feature

1. When configuring RepliWeb job, click the **Properties** button.
2. In the Performance tab, click drop-down list in **Throughput** block. Refer to the “Considerations” section of this document to understand difference between the Compression options.



Selecting a compression algorithm

This section describes how to determine which compression algorithm to use in a specific certain environment. Please refer to the RepliWeb RDS manuals for more information.

The choices are:

- **None** - No compression is used on the data to be transmitted. Unless there are bottleneck problems due to network overload, specify **None** as the compression method on LANs or other high-speed networks.
- **Normal** - A limited compression algorithm is utilized to compress the data.
- **AP** - A moderately efficient compression algorithm, providing a higher degree of compression than the **Normal** algorithm, is utilized to compress the data.
- **Power** - The strongest compression algorithm utilized, produces better compression results on executable files than the **Normal** and **AP** algorithms, but consumes considerable resource usage.

Compression Ratio

The compression ratio depends on the data type: AP would be 1:2 or less on executables and much better on data files (can be 1:5, 1:10 or even 1:100, depending on the type of data). If you use it on compressed files (*.zip, etc.) or mpeg video files it will not compress at all.

Power will be a little better on executables than AP but it will take much more CPU so you should use it only when the machine is very powerful and the line is very slow.

The key issue when using compression is to maintain the advantage of faster file transfers taking in consideration computer resources, compression time and bandwidth. The different compression algorithms allow flexibility in that.

Due to the many factors involved in this process the best thing is to experiment with the different algorithms within the specific environment where the file transfer is to take place.

Transfer Rates

As a rule of thumb, compression will accelerate transfer on slow communication lines, i.e., when a transfer rate of up to 256 Kbps is allocated for a single Replication operation.

At higher transfer rates, compression will slow down the transfer, although it will always reduce the volume of transferred data (unless the files were previously compressed). For example, T1 lines are used for many types of communication, including data communications, telephone, etc., assuming a slice of 512Kbps is allocated for TCP/IP on a T1 line. If a single operation is using the entire 512Kbps, throughput time will be reduced if compression is used. However, if two concurrent Replication operations are initiated on such a line, each operation has an effective throughput of 256Kbps, and compression will accelerate both of them.

Chapter 8: Troubleshooting

Known Issues

For installation known issues, refer to the [SmarTeam Support Web](#) Site.

Frequently Asked Questions

For Frequently asked Questions (FAQ) refer to the [SmarTeam Support Web](#) Site.