

Replication Manual

1. Product Information

Product: BackupAgent Replication Option

Version: 4.0

2. Introduction

BackupAgent Replication is an optional module for the BackupAgent Cloud Backup Platform (BackupAgent Platform) server software that allows the replication of data on storage locations to an external location.

Replication can be used to create a backup of the backups for failover purposes. It can also be used in a LAN based backup setup: high speed backup and restore using the internal LAN, augmented with replication of the data to a safe offsite location.

These usage scenarios are explained in more detail in the Concepts & Overview chapter.

This manual covers the requirements and installation of the replication option, as well as the configuration and monitoring of replication.

Chapter 4 covers the requirements for all the components of the replication solution. In Chapter 5 we provide a general overview of the solution: concepts, usage scenario's, and features. Chapter 6 explains the steps necessary to install and setup the components. The configuration and monitoring of replication is covered in chapter 7. Chapter 8 covers the unfortunate case in which you have to recover from an emergency situation.

3. Requirements

The BackupAgent Replication option consists of three components:

- The BackupAgent Platform server software:
The server's Management Console is used for configuration and monitoring of replication. It is available from v4.0.
- The Replication Client:
Component is installed on storage location and responsible for the actual replication of the data on the storage locations to the Replication Server.
- The Replication Server:
Component is installed on the replication destination: the location data is replicated to. This component cooperates with the client component.

Note: Make sure that the same version is used for all three components.

3.1 BackupAgent Platform requirements

Replication is introduced as an optional module for the BackupAgent Platform server as of version 4.0. If you want to use replication, make sure the server (BackupAgent Platform) is upgraded to at least this version.

As replication is an optional module, a license update might be necessary. If you haven't updated your license, contact BackupAgent first to obtain a new license before upgrading the BackupAgent Platform server. Make sure you have a license that includes the replication option, and use this license when updating the BackupAgent Platform.

For system requirements of the BackupAgent Platform, please see the BackupAgent Server installation manual.

3.2 Replication Client component requirements

The server that uses the Replication Client must meet the following requirements:

- Windows Server 2008 R2 with latest updates and patches
- 250 MB available RAM
- Local user account having access to the storage locations

Always use the same version number of the Replication Client component as the BackupAgent Platform. After running the setup, the Replication Client shall be installed as a separate windows service called 'BackupAgent Replication Client'.

3.3 Replication Server component requirements

The server that uses the Replication Client must meet the following requirements:

- Windows Server 2008 R2 with latest updates and patches
- 250 MB available RAM
- Enough free space to hold all the data that shall be replicated

Always use the same version number of the Replication Server component as the BackupAgent Platform.

4. Concepts & Overview

4.1 Usage Scenario's

There are several usage scenarios for replication that are supported by the BackupAgent Replication module. The most important ones are discussed here.

4.1.1 Backup of the backup

Creating a backup of your backups is a crucial step in providing a safe and reliable online backup service to your customers. In case of an unexpected hardware failure on a storage location you need to be able to recover your customer's data.

The replication module allows the replication of all data on the storage locations to a second - preferably offsite - location. When a primary storage location fails, you can configure the location that data was replicated to as a temporary storage location. In the meantime you can fix the problem. After the problem has been fixed, you can use our User Reallocation Tool to copy data from the replication location back to the original storage location and automatically redirect users to this location again.

4.1.2 Appliance: support of LAN based backup + replication

This scenario combines LAN speed backup and restore with failsafe remote backup. The BackupAgent Platform server software is installed in the local network of a company. Desktop and server clients use this server for fast LAN speed backups and restores. The replication module replicates the data from the server to a remote location.

4.2 Concepts and Features

The BackupAgent replication option can be used to replicate data on the server's storage locations to another location.

4.2.1 Level of replication

Replication is configured and takes place at the level of the storage location. The administrator configures replication tasks for every storage location that is created in the server. The replication module will always replicate all data on the storage location.

Replication within a storage location is performed at the account level. This means that by replicating a storage location, all accounts on the storage location are replicated, one by one. The application keeps track of which account is being replicated. This means that if a replication run is suspended (after it runs out of its replication window), it will automatically resume from the next account.

4.2.2 Continuous replication

Replication is continuous which means that once a replication task is finished it will automatically start again. This ensures that changes on the storage location are replicated as soon as possible.

Replication is incremental, meaning that it will only copy files to the external destination that are not already there, as well as changed files.

Although the replication is continuous, it can be controlled by the concept of replication windows.

4.2.3 Replication window

For every replication task a replication window can be configured. The window specifies the time replication is allowed to run. This way you can configure replication to run in non-peak hours.

When a replication runs out of the window, the account it was replicating at that moment will be finished, and after this, the replication is suspended. When the replication window is entered again, replication will automatically resume from the next account.

4.2.4 Bandwidth throttling

You can configure the maximum used bandwidth per replication task, per storage location that is being replicated.

4.2.5 Central configuration and monitoring

Although the system consists out of three components, they can be configured and monitored centrally in the server's Management Console.

In the Management Console you can configure the replication tasks and select which storage locations should replicate to which destinations. The Management Console also provides monitoring of the replication: which tasks are running and their status, as well as reports of previous replication runs.

4.2.6 Supported replication setups

The replication module replicates data from storage locations to replication destinations. A storage location is controlled by a Replication Client component. A replication destination is controlled by a Replication Server component.

The system supports several different setups. You can have one or more storage locations in your system that need to be replicated. Storage can be direct attached or a NAS; it can be local to the BackupAgent server or remote. For every storage location you need to install a Replication Client that has to be matched to a Replication Server (a replication destination). You can replicate each storage location to its own destination (n-n), or you can replicate each storage location to the same destination (n-1).

The above implies that the configuration of a replication task basically means selecting a Replication Client to replicate from, and a replication destination to replicate to.

4.3 Components

The replication module consists out of three components: configuration and monitoring is part of the BackupAgent Platform server; Replication Client; Replication Server.

4.3.1 BackupAgent Platform

As of release 4.0 the BackupAgent Platform server software contains the replication module. The Management Console can be used to setup the replication tasks and monitor their status and replication progress.

4.3.2 Replication Client

The Replication Client component is installed on each storage location (or on a machine that has access to the storage location). The Replication Client gets its configuration from the BackupAgent Platform server and uses this to actually start and perform the replication. For this it cooperates with the Replication Server component. It regularly updates the server with progress and status information.

4.3.3 Replication Server

The Replication Server component is installed on the destination machine. It cooperates with the Replication Client to perform the actual replication. One Replication Server can accept data from several different Replication Clients.

5. Installation

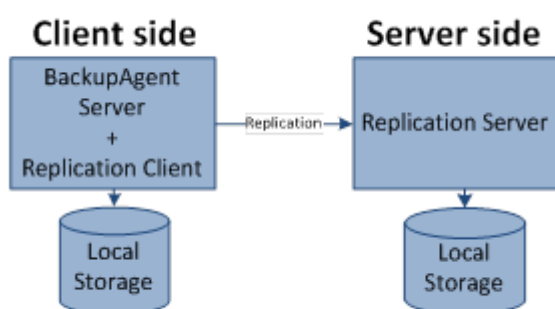
5.1 Planning your replication topology

Every storage location should have one Replication Client serving it. A Replication Client can potentially serve several storage locations. The Replication Client needs access to the storage for

the storage location, so keep this in mind when planning your replication topology. See different topology scenarios below.

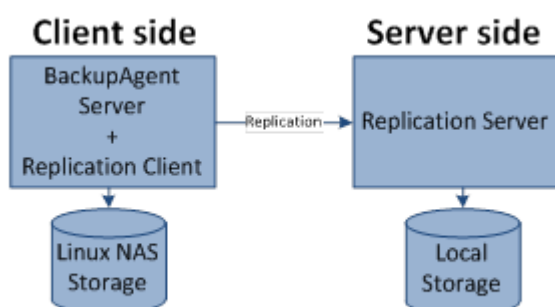
5.1.1 Scenario 1: Simple replication of local disks

- Replication Client is installed on BA server with local storage
- Replication Server is installed on different machine with local storage
- Both servers are connected via IP network with at least port 873 is open



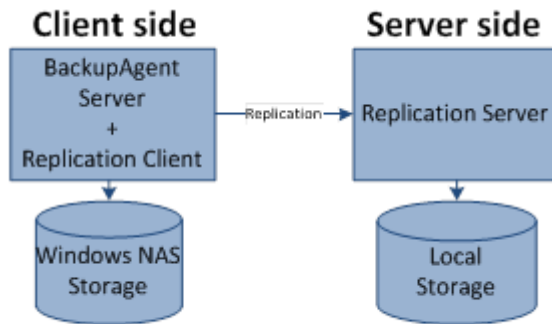
5.1.2 Scenario 2: Replication of a Linux based NAS

- Replication Client is installed on BA server with storage on a Linux NAS
- Replication Server is installed on separate machine with local storage
- Both servers are connected via IP network with at least port 873 is



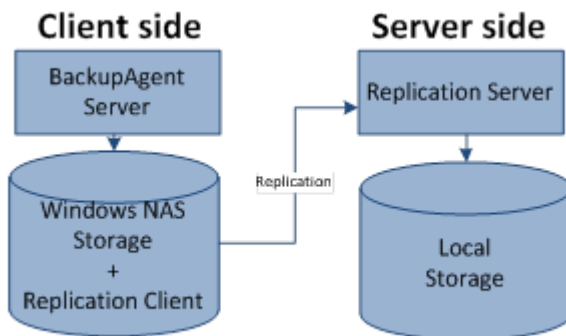
5.1.3 Scenario 3: Replication of a Windows based NAS

- Replication Client is installed on BA server with storage on a Windows NAS
- Replication Server is installed on a separate machine with local storage
- Both servers are connected via IP network with at least port 873 is open



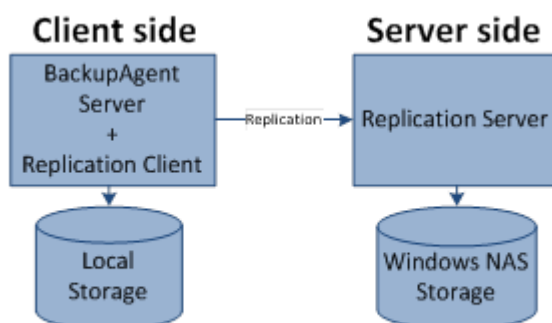
5.1.4 Scenario 4: Replication of a Windows based NAS

- Replication Client is installed on a Windows NAS with local storage
- Replication Server is installed on a separate machine with local storage
- Both servers are connected via IP network with at least port 873 is open



5.1.5 Scenario 5: Replication with destination on a Linux based NAS

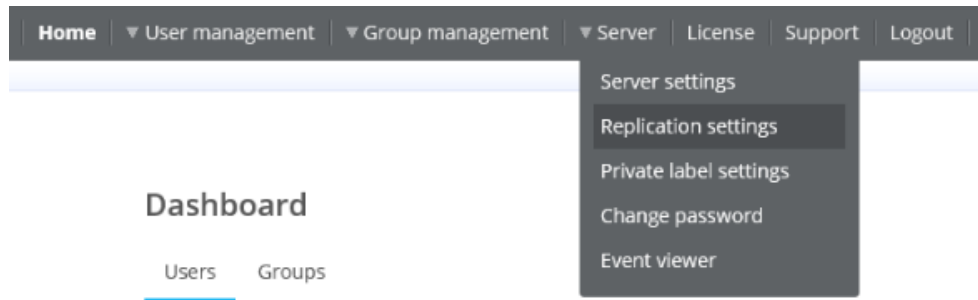
- Replication Client is installed on BackupAgent server
- Replication Server on separate machine with storage on a Windows NAS



5.2 Upgrading the BackupAgent Platform server

Make sure the BackupAgent Platform is at least running v4.0. If this is not the case, you need to upgrade the server to this version. Please contact BackupAgent for instructions.

The replication requires an activated module in the license. If this module is activated you are able to configure the Replication from within the Management Console: 'Server settings' > 'Replication settings'.



If this option is not enabled, please contact BackupAgent for a new license key with the replication option enabled.

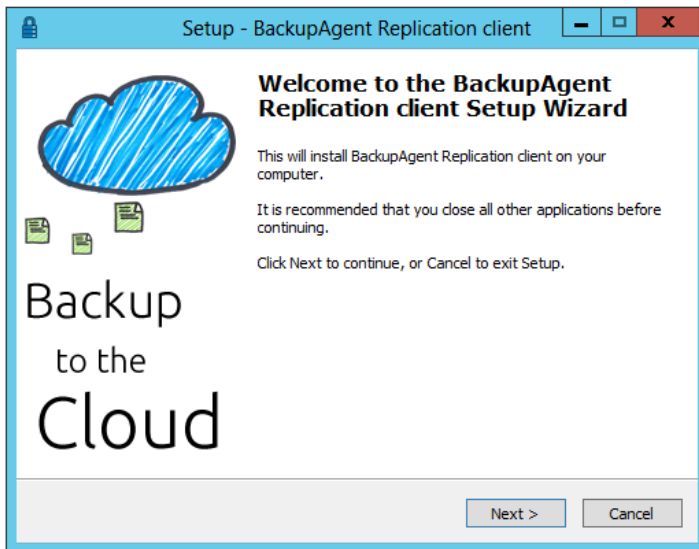
5.3 Installing the Replication Client component

Install the Replication Client on a Windows based computer which meets these requirements:

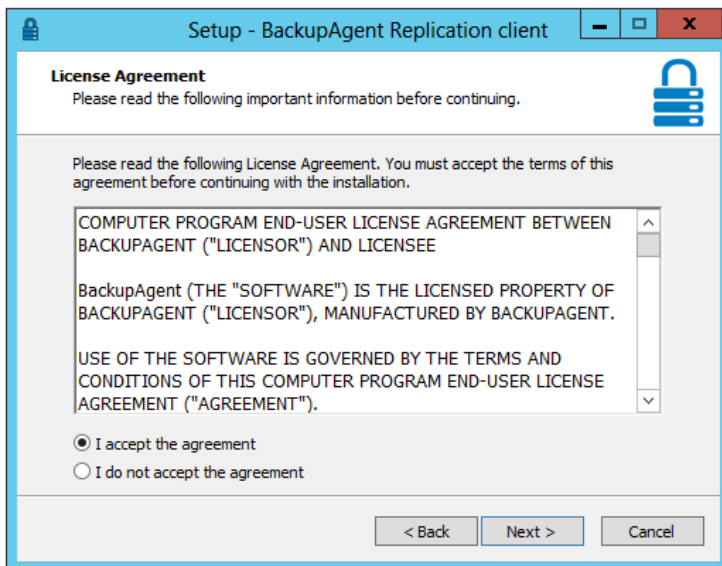
- Windows Server 2008 R2 with latest updates and patches
- 250 MB available RAM
- Local user account having access to the storage locations

Installation is a straight forward process. After starting the setup, you shall be guided through the installation:

Setup starts



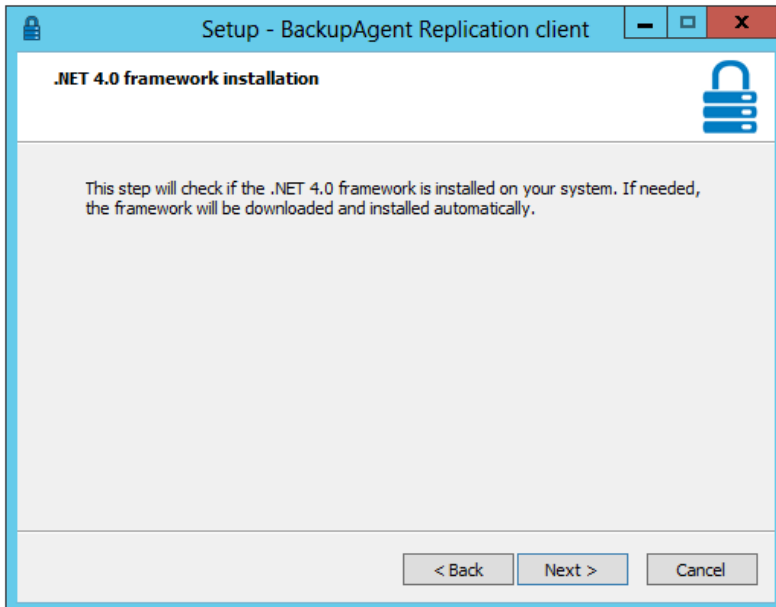
License agreement



Detection of .Net 4.0

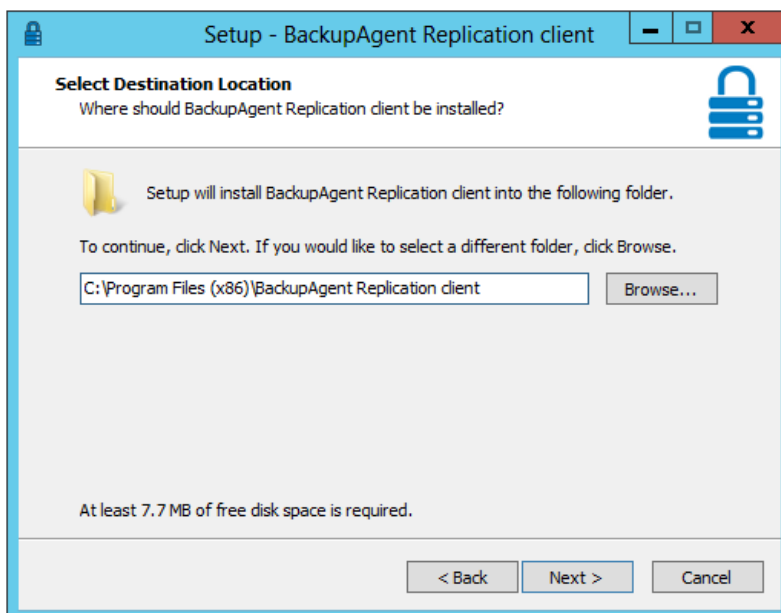
Because the BackupAgent Replication Client is a .Net 4.0 application, it detects if this framework is not installed. If this is not the case, the setup will automatically download and install the .Net 4.0 framework.

Please be aware that after installing the .Net framework a reboot is required before you will be able to continue the installation of Replication Client.



Destination of the application

Select the destination of the Replication Client application here. This contains the application components to be able to run the Replication Client.

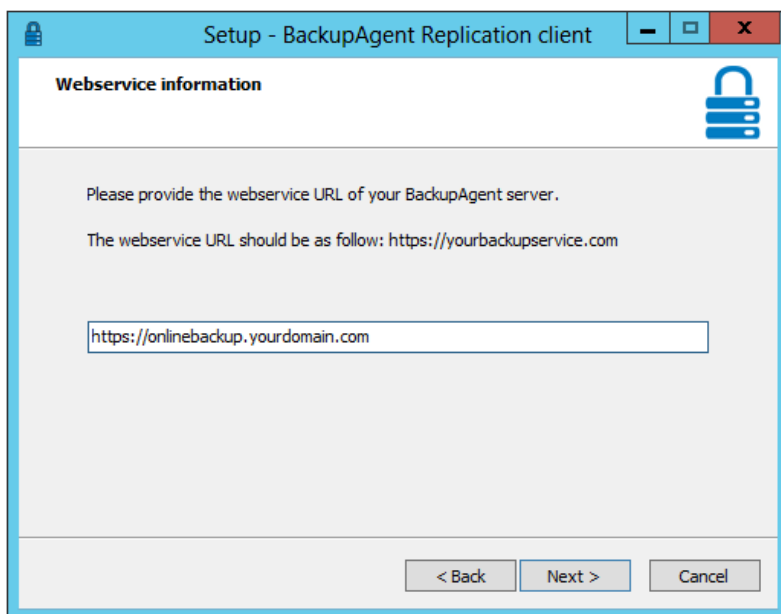


Enter web service address

Enter the web service address to which the Replication Client should connect to. This is the DNS address your BackupAgent clients connect to.

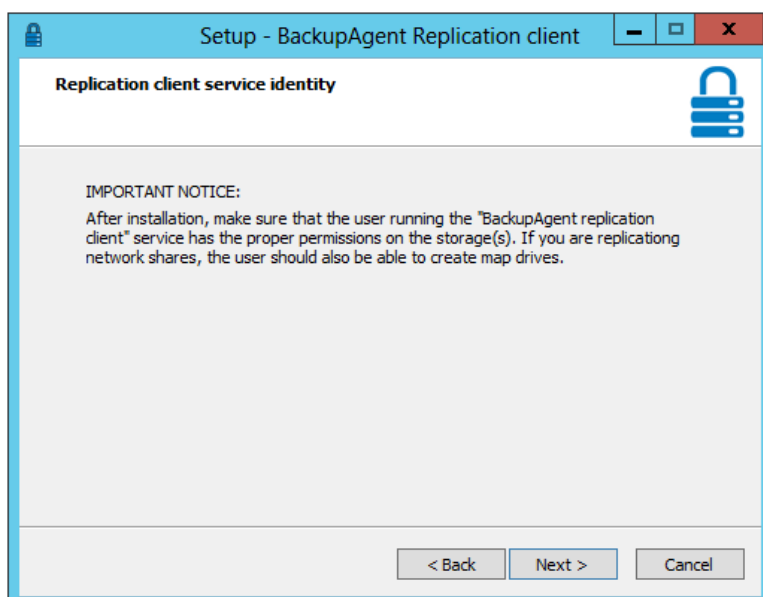
For example: <https://onlinebackup.yourdomain.com>

The setup shall verify this address and warn you if it is unable to connect to your BackupAgent server.

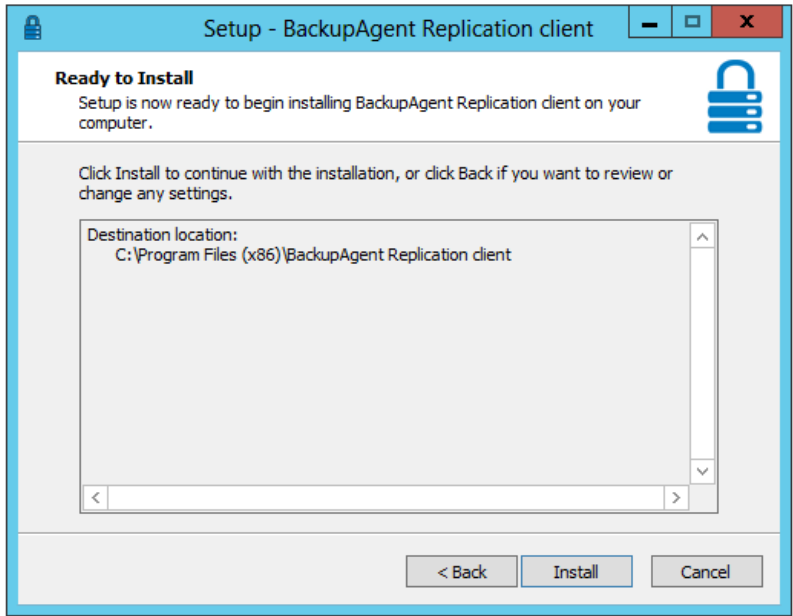


Warning message about storage access

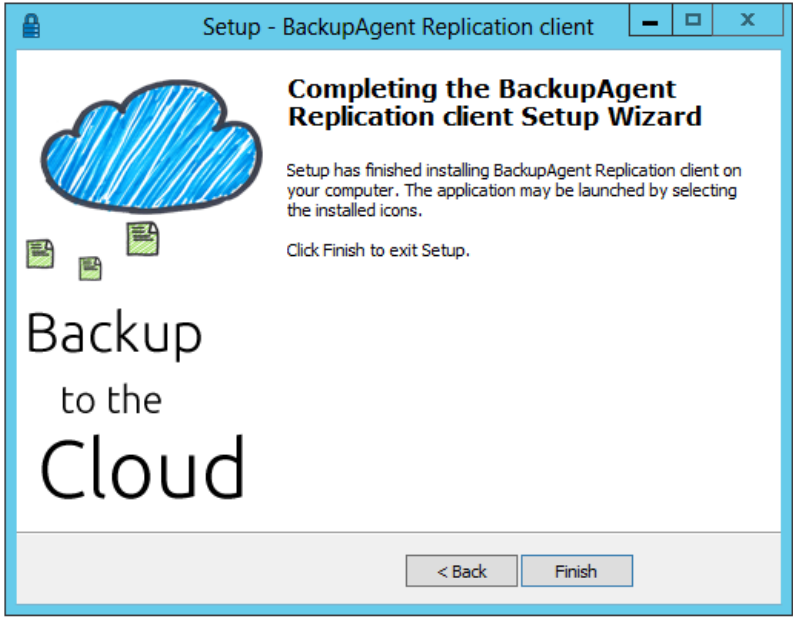
IMPORTANT: The Local System account is normally unable to map drives. If you use storage locations on other servers than the local machine, you need to reconfigure the new BackupAgent Replication Client's Windows service, so it logs on using a local administrator account.



Ready for installation



Installation completed



You should have a new windows service installed, called 'BackupAgent Replication Client':

Services (Local)				
Name	Description	Status	Startup Type	Log On As
BackupAgent Replication client				
Background Intelligent Transfer Service	Transfers files in the background using idle network bandwidth. If the servi...		Manual	Local System
Background Tasks Infrastructure Service	Windows infrastructure service that controls which background tasks can r...	Running	Automatic	Local System
BackupAgent Replication client		Running	Automatic	Local System
Base Filtering Engine	The Base Filtering Engine (BFE) is a service that manages firewall and Inter...	Running	Automatic	Local Service

REMEMBER: If one of your storage locations is not on the local machine, you need to reconfigure this service to run under an account that has the rights to map a drive to that storage location.

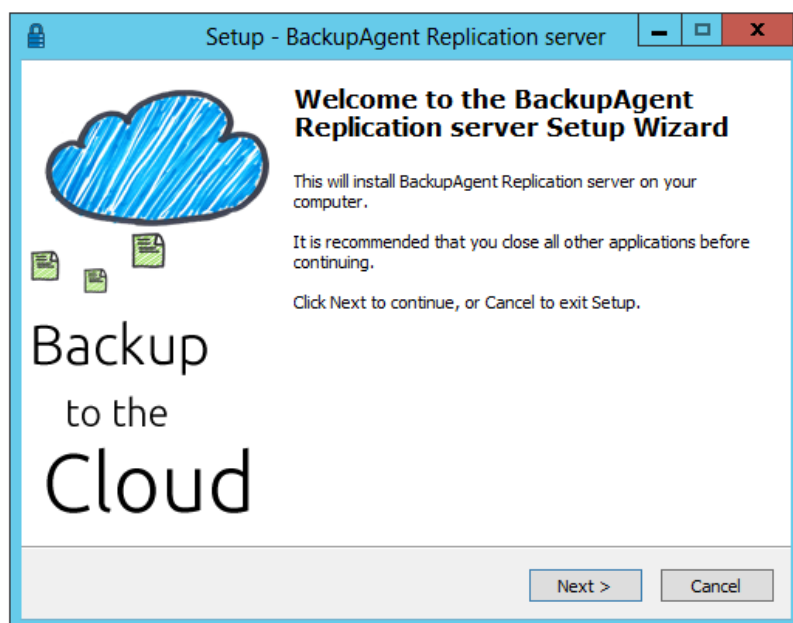
5.4 Installing the Replication Server component

Install the Replication Client on a Windows based computer which meets these requirements:

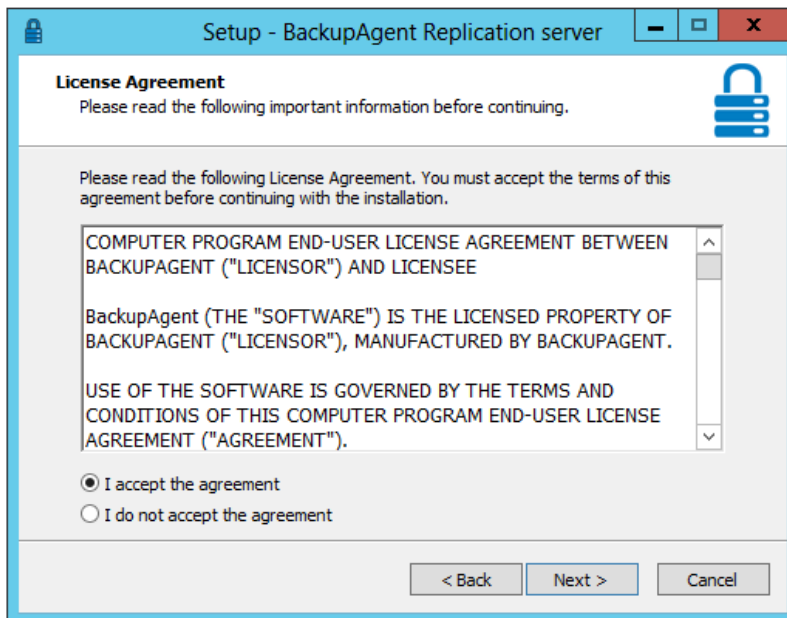
- Windows Server 2008 R2 with latest updates and patches
- 250 MB available RAM

Like the client component, installation is a straight forward process. After starting the setup, you shall be guided through the installation:

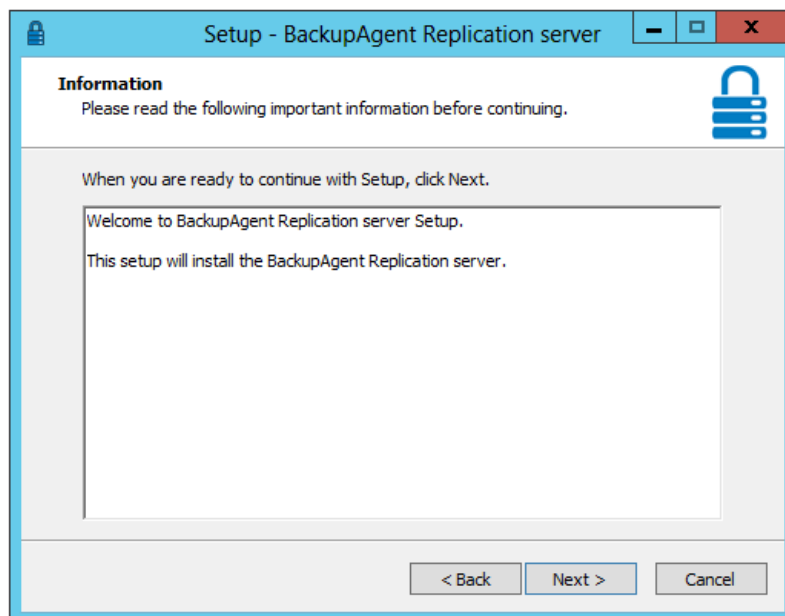
Setup of Replication Server starts



License agreement

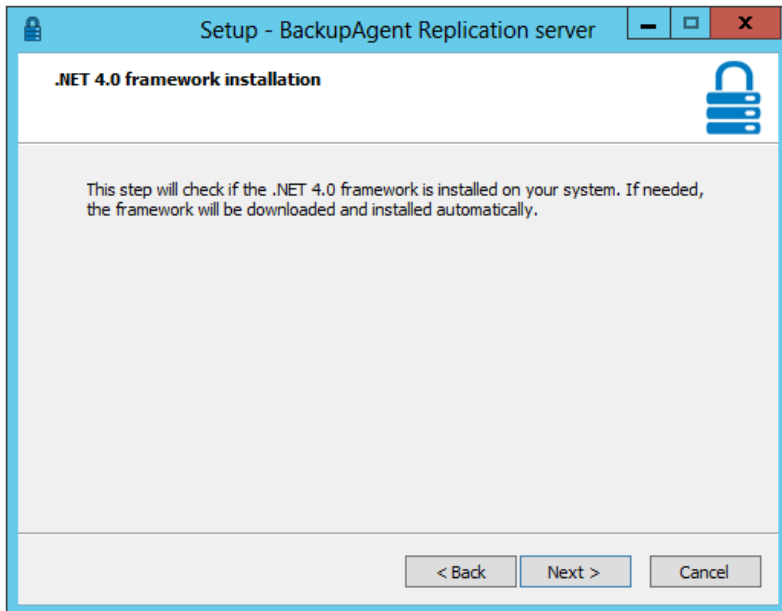


Informational step



Detection of the .Net 4.0 Framework

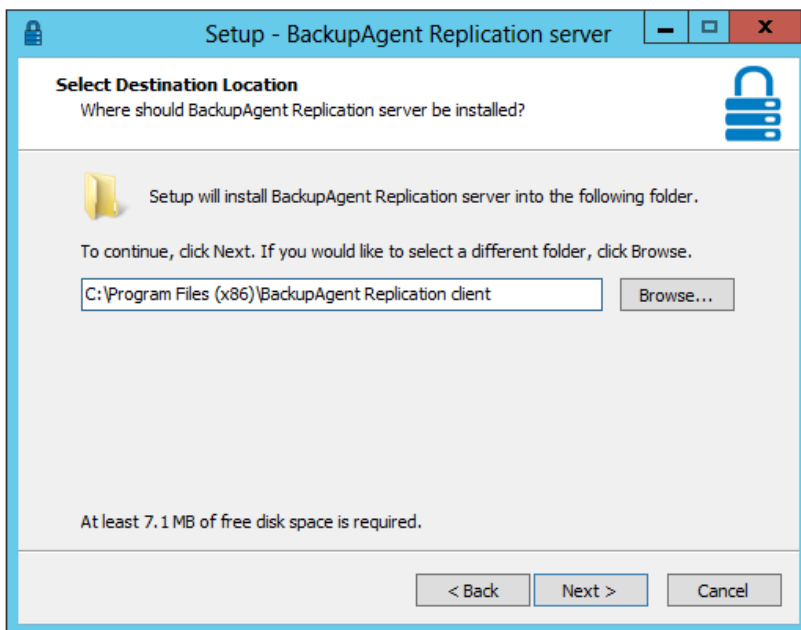
Because the BackupAgent Replication Server is a .Net 4.0 application, it detects if this framework is installed or not. If this is not the case, the setup shall abort. You can download the .Net 4.0 framework for free from the Microsoft website.



Destination of the application

Select the destination where you want the BackupAgent Replication Server to be installed.

Note: This is not the location where the replicated data will be stored.

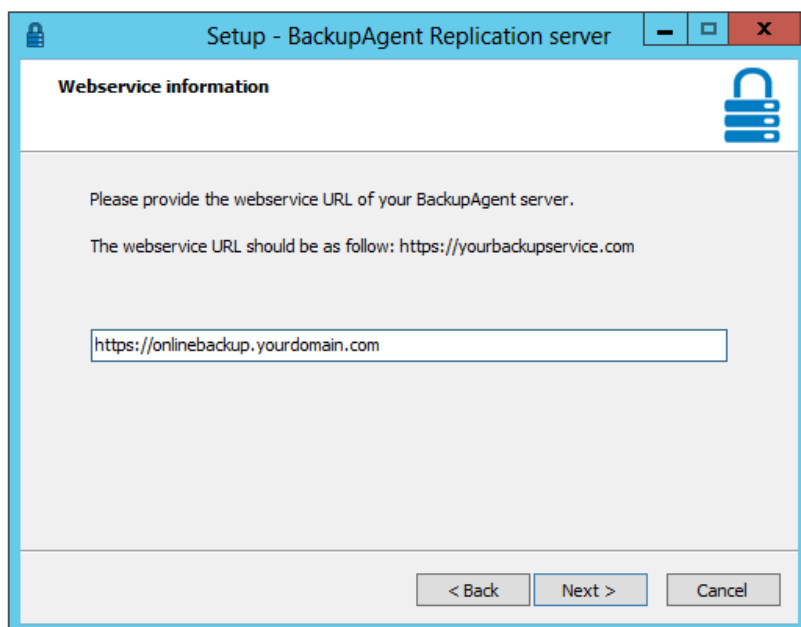


Enter the web service address

Enter the web service address to which the Replication Client should connect to. Typically this is the DNS address your BackupAgent clients connect to.

For example: <https://onlinebackup.yourdomain.com>

The setup will verify this address and warn you if it is unable to connect to your BackupAgent server.



Configuring the Replication Server

- Select the path where the replicated data should be stored. There should be enough space to contain all the data selected for replication.
- Enter a custom login name and password which shall be used by the Replication Client to connect.
- Enter the TCP port number to which the Replication Server should listen. Any firewall or routing devices should be configured to allow communication over this port from client to server.

Note: This configuration, including username and password, is stored in the database. There is no need to remember them later as the Replication Client shall read this from the database. Also, this cannot be changed later on, other than by removing the Replication Server and installing it again.

The screenshot shows a Windows-style dialog box titled "Setup - BackupAgent Replication server". The main heading is "Replication destination". It contains four input fields with labels: "Please provide the path of the folder where the data should be replicated." (with a "Browse..." button), "Please provide the your custom login name for replication", "Please provide the your custom login password for replication", and "Please provide the port number that will be used by the replication." (with the value "873" entered). At the bottom are three buttons: "< Back", "Next >", and "Cancel".

When receiving the following error message at this step:

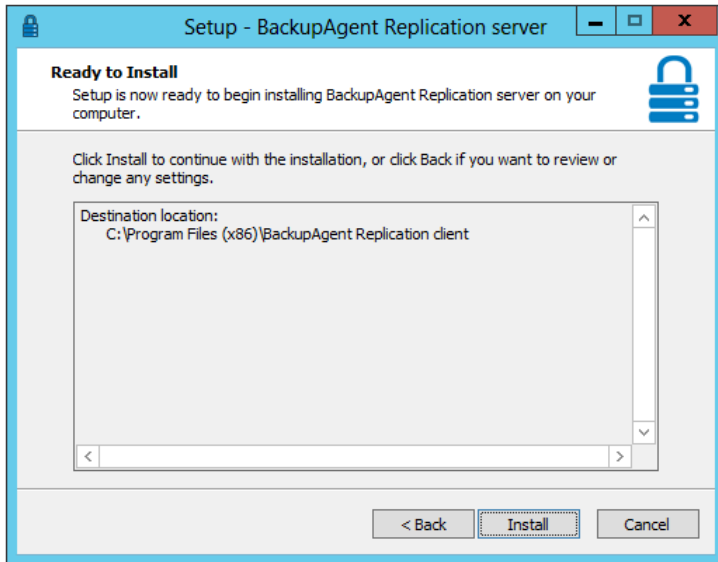
“A replication destination with the same name (DESTINATION) already exists.”

This is probably due to a previous installation of the Replication Server on this machine. When uninstalling the software, the application is removed, but it is not automatically removed from the database.

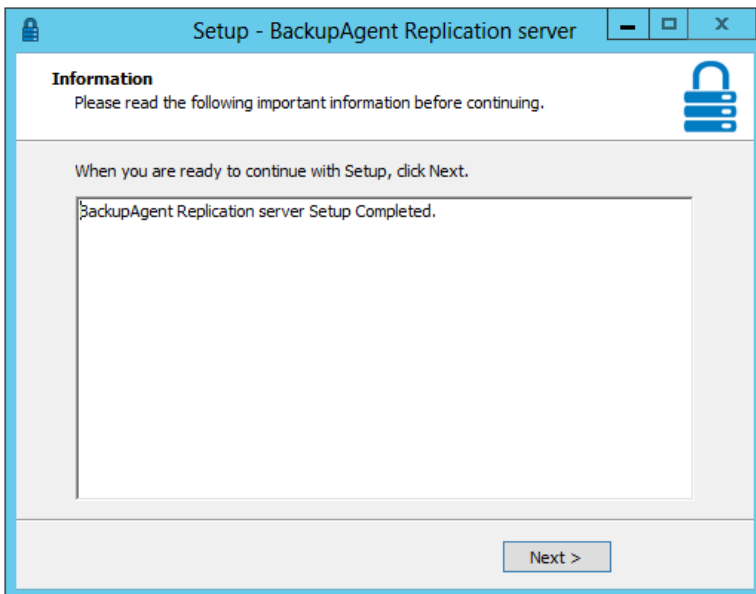
Perform the following steps to correct this:

1. In the Management Console, at Replication Settings, make sure that no task is configured to use this as destination, even the inactive tasks.
2. Open the BackupAgent database using SQL Management studio
3. Open table 'dbo.ReplicationDestinations'
4. Delete the corresponding row. If you receive the following error message, you need to make sure that no replication task is using this destination (see step 1).
 - No rows were deleted.
 - A problem occurred attempting to delete row row.
 - Error source: .Net SqlClient Data Provider.
5. Now you can successfully add the destination

Informational message



Setup is completed



You should now have a new windows service called 'Rsync':

Services (Local)					
	me	Description	Status	Startup Type	Log On As
RsyncServer					
Stop the service	Routing and Remote Access	Offers routing services to businesses in local area and wide area network e...		Disabled	Local System
Restart the service	RPC Endpoint Mapper	Resolves RPC interfaces identifiers to transport endpoints. If this service is ...	Running	Automatic	Network Service
	RsyncServer	Rsync - open source utility that provides fast incremental file transfer	Running	Automatic	Local System
	Secondary Logon	Enables starting processes under alternate credentials. If this service is stop...		Manual	Local System
Description:	Secure Socket Tunneling Protocol Service	Provides support for the Secure Socket Tunneling Protocol (SSTP) to conn...		Manual	Local Service
	Security Accounts Manager	The startup of this service signals other services that the Security Accounts...	Running	Automatic	Local System
	Server	Supports file, print, and named-pipe sharing over the network for this com...	Running	Automatic	Local System

Note: The new Windows service does not have 'BackupAgent' in the name

6. Working with replication

Before you start configuring replication, make sure that you upgraded the BackupAgent Platform server to 4.0 or higher, and installed at least one Replication Client and Replication Server component. You can always install extra Replication Clients and Replication Servers later.

See the chapter about Installation for more information on how to decide where to install Replication Client and Server components.

6.1 Configure replication destinations

Before you can configure replications tasks you need to review the configuration of the replication destinations. You have to configure a replication destination for every Replication Server component that is installed.

You can review and configure the replication destinations from the Replication destinations tab. Select 'Replication Settings' from the 'Server' menu in the server. And then select the 'Replication destinations' tab.

Replication settings

Replication status Replication configuration **Replication destinations**

Here you can configure all your replication destinations.

Destination name	Destination path	Host name	Port
<input type="text" value="WIN-HHSH2SESS8L"/>	<input type="text" value="C:\Replication"/>	<input type="text" value="WIN-HHSH2SESS8L"/>	<input type="text" value="873"/>

When a Replication Server component is installed, an entry for it will automatically be created in the Replication Destination tab. It is configured by default with settings that were provided during the installation of the Replication Server component. In most cases you don't have to change anything here.

The replication destination settings are:

- Destination name: this is a symbolic name of the replication destination. By default it is the computer name of the machine on which the Replication Server is installed.
- Destination path: this is the root path on the Replication Server machine to which data will be replicated. All storage locations that are replicated to this destination will appear under this root path. The structure is <destination path>\<storage location name>\account1...n.

The path was provided during the installation of the Replication Server. It is displayed here for your convenience, but cannot be changed.

- **Hostname:** The hostname of the machine on which the Replication Server is installed. By default this is the computer name of the machine on which the Replication Server was installed.
- **Port:** The port that is being used to listen for incoming replication requests. It is provided during the installation of the Replication Server. It is displayed here for your convenience, but cannot be changed.

Review the settings and change them if necessary. Press 'Update' to save your changes.

6.2 Configure replication tasks

Replication takes place at the level of Storage Locations. This implies that for every Storage Location on your system, you need to configure a replication task.

6.2.1 Overview

The system automatically creates a replication task for every Storage Location that exists. The task will be inactive until you update the configuration and activate the task.

The 'Replication Configuration' tab displays an overview of all replication tasks. Open the overview by selecting 'Replication Settings' from the 'Server' menu in the server, and then select the 'Replication Configuration' tab.

Replication settings

Replication status Replication configuration Replication destinations

Here you can configure all your replication tasks.

Active	Storage location name	Storage location ID	Status	
<input checked="" type="checkbox"/>	Default storage location name	1002	Not configured	Run configuration test
<input checked="" type="checkbox"/>	Default storage location name_MongoDB	1003	Not configured	Run configuration test

Update Cancel

The overview displays a list of all configuration tasks:

- Name and ID of the storage location that the replication task is for.
- Active/inactive indicator. You can activate or deactivate the task by checking or unchecking the Activate checkbox.
- The Status of the task:

- Not Configured: The task is created by the server but was not configured by the administrator yet.
- Inactive: The task is configured but not active, meaning it won't run.
- Active: The task is active; meaning it will run.
- Error: There is an error with the configuration of the task. An error message will be displayed below the overview fields. Make the necessary changes in the configuration (this might imply changes to the systems where the Replication Client and/or Replication Server are installed). After you corrected the problem you can try the 'Run configuration test' button to test the configuration.
- The 'Run Configuration Test' button. This enables you to test if the current configuration is working correctly. See here for more details.
- You can expand the overview line to see and edit the configuration of the task.

6.2.2 Edit replication tasks

To edit a replication task, expand the corresponding task in the overview on the 'Replication Configuration' tab, make the necessary changes, and press 'Update' to save your changes. Please note that by pressing 'Update' you save changes made to any of the replication tasks.

When saving your changes, the system will perform some input validations like mandatory fields and provide feedback if necessary. It will however not automatically check if the configuration is valid and functioning. To do this you can test the configuration before saving.

Replication settings

Replication status **Replication configuration** Replication destinations

Here you can configure all your replication tasks.

Active	Storage location name	Storage location ID	Status	
<input checked="" type="checkbox"/>	Default storage location name	1002	Not configured	Run configuration test
Replication client: <input type="text" value="WIN-HHSH25ESS8L"/>				
Replication destination: <input type="text" value="WIN-HHSH25ESS8L"/>				
Local storage path: <input type="text" value="c:\UserFiles\Location\"/>				
Replicate between: <input type="text" value="12:00 AM"/> and <input type="text" value="12:00 AM"/>				
Bandwidth usage: <input type="text" value="Unlimited"/>				
<input checked="" type="checkbox"/>	Default storage location name_MongoDB	1003	Not configured	Run configuration test
				Update Cancel

The following fields can be edited:

- **Replication Client:** select the Replication Client responsible for replication of this storage location. The Replication Client needs to have access to the storage location. You can test the configuration before saving; the system will then test if the Replication Client you selected has access to the storage location path.
- **Replication destination:** select the desired replication destination from the list. The list is automatically filled with all configured replication destinations (all installed Replication Server components). The replication destination represents the destination to which data from this storage location will be replicated to.
- **Local storage path:** This is the root path of the storage location. The server cannot read this path automatically so you have to provide it here manually.
- **Replicate between:** Select a start time and end time. Replication will run between the start and end time and automatically suspend after the end time. Specify an equal time for start and end time to allow replication to run continuously. See here for more details on Replication Windows.
- **Bandwidth usage:** you can limit the bandwidth that the Replication Client is allowed to use for replicating data from this storage location. The bandwidth setting influences the network traffic between the Replication Client and the Replication Server.

Note: When you save your changes it can take up to ten minutes before the changes are picked up by the Replication Client component and take effect. If you cannot wait for this, restart the Replication Client service and the changes will be picked up within one minute.

6.2.3 Test the configuration

You can test the configuration of a replication task. Every replication task in the 'Replication Configuration' tab has its own 'Run configuration test' button. Press the button to start the test.

- The system will first perform general input validations, e.g. check for mandatory fields.
- Next it will ask the Replication Client you selected to perform a simulation of replication with the parameters you specified in the replication task. If there is any problem the system will provide feedback of the problem so you can correct it. Common problems are:
 - The Replication Client cannot access the storage location, e.g. because the user does not have sufficient access.

- The local storage path you specified is wrong

Replication settings

Replication status	Replication configuration	Replication destinations				
	Storage location name	Storage location ID	Status/Last run	Progress (% size processed)	Start time	Current run time (d:hh:mm)
⊕	Default storage location name	1002	Running / Success	0	10/8/2014 2:10 PM	00:00:00
	Default storage location name_MongoDB	1003	Unknown / -	-	-	-

Status at: 10/8/2014 2:10 PM

The test will not perform any real replication, but because it does check the communication between all involved components it can take a few seconds up to a minute to complete.

When the system reports an error, it will be transient and not stored. This means that if the Status was e.g. 'Active' before you ran the test, and the test returns Error, the value that is stored will still be *Active*.

Note: Be aware that the test uses the configuration fields that are currently filled in for the replication task, even if these fields are not saved yet. It does however use the saved settings of the selected replication destination.

6.3 Monitoring replication

You can monitor the progress and status of all replication tasks from the Management Console in the 'Replication Status' tab.

Select 'Server' in the menu, then select 'Replication Settings', and select the 'Replication status' tab.

Replication settings

Replication status	Replication configuration	Replication destinations				
	Storage location name	Storage location ID	Status/Last run	Progress (% size processed)	Start time	Current run time (d:hh:mm)
⊕	Default storage location name	1002	Running / Success	0	10/8/2014 2:10 PM	00:00:00
	Default storage location name_MongoDB	1003	Unknown / -	-	-	-

Status at: 10/8/2014 2:10 PM

6.3.1 Overview

The Replication tab displays an overview of the status of all replication tasks. It displays the following information:

- **Storage location name:** The name of the storage location that is handled by this task.

- **Storage location ID:** The Id of the storage location that is handled by this task.
- **Status/Last run:** Displays the overall status of the replication task, and the status of the last replication run.
- **Progress:** The percentage of the total file size that has been processed in the current replication run.
- **Start time:** The time the current replication run has started.
- **Current run time:** The time the current replication run has been running.

Replication runs continuously: it starts a replication run, and after it has finished, it will start again. The overview displays information on the currently running replication run (with the exception of the Status of the last run). To get information on previous runs, please see the reports.

Note: The information displayed here is not automatically refreshed! To refresh the information you need to refresh the page. In the left bottom of the page the date and time the information was retrieved is indicated.

6.3.2 Explanation of status

The status indicator in the overview displays information in the following format: <Overall Status> / <Status Last Run>.

The <Overall Status> displays the overall status of the replication task. It can have the following values:

- **Running:** The replication task is running at the moment.
- **Suspended:** The replication task is suspended (paused) because it ran out of the replication window. It will automatically resume when the replication window starts again.
- **Unknown:** The system is unable to get information from the replication components.
 - This might be caused because the Replication Client was stopped in the middle of a run and because of this the Replication Client was not able to send update information to the server. If the server does not receive an update in one hour, it will report the status as Unknown.
 - Another cause can be that the replication task is active but has never run yet.

- **Error:** The task is in an error status. This means there is something wrong with the configuration of the task. Check the 'Replication status' tab to see the error message.

Periodically (every fifteen minutes) the Replication Client component contacts the BA server to collect configuration changes.

The <Status Last Run> indicated the status of the last run of this replication task. It can have the following values:

- **Successful:** The run was successfully finished.
- **Failed:** The last run failed. Expand the node to see the reports. The report on the top is from the last run and will contain the error message.

6.3.3 Replication Reports

The BA server creates reports of the replication runs for every replication task. By default it keeps up to ten reports for every replication task.

You can access the reports by expanding the corresponding node in the overview on the Replication status tab.

Replication	status	tab.
<p>Status: Success</p> <p><u>Statistics</u> Start time: 10/8/2014 2:15 PM End time: 10/8/2014 2:15 PM Run time (dd/hh/mn): 00:00:00 Number of files (and directories) processed: 14 File size processed: 632.83 KB Number of new/updated files transferred: 0 New/updated file size transferred: 0 B</p>		<p><u>Configuration summary</u> Replication client: WIN-HHSH25ESS8L Local storage path: c:\UserFilesLocation\ Replication destination: WIN-HHSH25ESS8L Bandwidth usage: Unlimited</p>
<p>Status: Success</p> <p><u>Statistics</u> Start time: 10/8/2014 2:15 PM End time: 10/8/2014 2:15 PM Run time (dd/hh/mn): 00:00:00</p>		<p><u>Configuration summary</u> Replication client: WIN-HHSH25ESS8L Local storage path: c:\UserFilesLocation\ Replication destination: WIN-HHSH25ESS8L</p>

The report consists of three parts:

The **Status** part displays the status: Either Success, or Failed. If the status is failed it will also display an error message.

Replication settings

Replication status	Replication configuration	Replication destinations				
	Storage location name	Storage location ID	Status/Last run	Progress (% size processed)	Start time	Current run time (d:hh:mm)
Ⓜ	Default storage location name	1002	Running / Success	0	10/8/2014 2:10 PM	00:00:00
	Default storage location name_MongoDB	1003	Unknown / -	-	-	-

Status at: 10/8/2014 2:10 PM

Note that failed replication runs imply that something went wrong during the replication itself. The overall status of task is determined by periodical tests the system performs itself which usually points to configuration problems.

The **Statistics** part of the report displays some useful information on the replication run:

- Start time, end time, and duration: Please note that duration is not always equal to the end time – start time. A replication run could potentially be suspended for some time when it runs out of the replication window.
- Number of files processed/ files size processed: The number of files (including folders) and the total file size that has been processed. 'Processed' means the files and directories are read by the Replication Client.
- Number of new/updated files transferred / new/updated file size transferred: This is the total number of files and file size that the Replication Client has send to the Replication Server.

The **Configuration summary** part of the report summarizes the configuration which was uses in this replication run.

7. Recovering from an emergency situation

There are two ways of recovering from an emergency situation:

- Restore all data back to the original storage location
- Temporary redirect all traffic to the replication destination

7.1 Restore all data back to the original storage location

This method is the easiest, but causes the longest downtime for your services.

- Repair your original storage location
- Copy all data back from your replication destination to your original storage location

Note: Currently, it is not possible to use the Management Console to replicate the data back to the original location. You should use windows explorer, ftp or similar solution to transfer all data

7.2 Temporary redirect all traffic to the replication destination

This method is more complex, but has the least downtime for your services.

In case the BackupAgent front end servers have access to the storage location via UNC path (e.g. '\\nas\share') or as a local drive (not drive mapping), you can reconfigure your storage location to the remote location. If the remote location is not accessible by SMB or CIFS, this method cannot be used.

By using this method you can minimize your service interruption time and use some automatic steps to speed up the recovery. The steps involved are:

1. Configure the remote destination (where the backup of your data resides) as an additional storage location
 1. The idea is that by using the replication destination (that holds the backup of your data) as a temporary storage location backups can continue with minimal interruption while you solve the problem.
 2. Make sure the root folder has the correct number (1003, 1004, etc)
2. Assign the users from the old (crashed) storage location to this new storage location (Use the User Reallocation Tool).
3. Solve the problem of the original storage location.
4. Copy data from the remote destination to the repaired storage location (Use the User Reallocation Tool).
5. Assign users to the repaired storage location again (Use the User Reallocation Tool).

Note: You need the User Reallocation Tool for some of these steps, which is a separate free tool available from BackupAgent Support.

7.2.1 Configure the remote destination as an additional storage location

Perform these steps to configure the destination as a storage location:

1. Login into the Management Console.
2. Go to Server → server settings
3. Open tab 'storage locations'
4. Add the replication location as a new storage location

The screenshot shows the BackupAgent Management Console interface. At the top, there is a navigation bar with 'Home', 'User management', 'Group management', 'Server', 'License', 'Support', and 'Logout'. The language is set to 'English'. Below the navigation bar, the 'Server settings' page is displayed, with tabs for 'Server', 'Email', 'Storage locations', 'Account', and 'Maintenance service'. The 'Storage locations' tab is active, showing a table with the following data:

Name	ID	Users	Groups	Used size	Storage location	Default storage location	Type
Default storage location name	1002	1	0	625.7 KB	c:\UserFilesLocation\	X	UncZip

Below the table, there is an 'Add storage location' button. The form for adding a new storage location is titled 'Storage location' and includes the following fields:

- UNC Zip / MongoDB
- Storage name: (ISP Name)
- Storage location: (E:\Data)
- MongoDB Server/Database: (mongodb://localhost/CloudBackupService)
- MongoDB User Name: (CloudBackupServer)
- MongoDB Password:
- Windows Azure
- Amazon S3 / MongoDB
- Default storage location:

At the bottom of the form, there are three buttons: 'Update', 'Remove storage location', and 'Cancel'.

7.2.2 Assign the users from old (failed) storage location to the new storage location

Assigning users to a new storage location can be done both manually and automatically. Both options are explained below.

Manually

Reassign all users to the new storage location, by configuring the user:

Personal

User

User name	batest
Company	BackupAgent BV
First name	-
Last name	-
Address	-
ZIP Code	-
City	-
Country	Netherlands
Email	dennis.ferdinandus@backpag
Telephone	-

Account

User profile	Server
Account type	3 GB
Maximum bandwidth	Unlimited
Storage location	Default storage location name Replication Destination
Active	<input checked="" type="checkbox"/>
Restore active	<input checked="" type="checkbox"/>
Enable auto remove	<input type="checkbox"/>
Default language	English

Send activation email

Reset password

Update

Remove

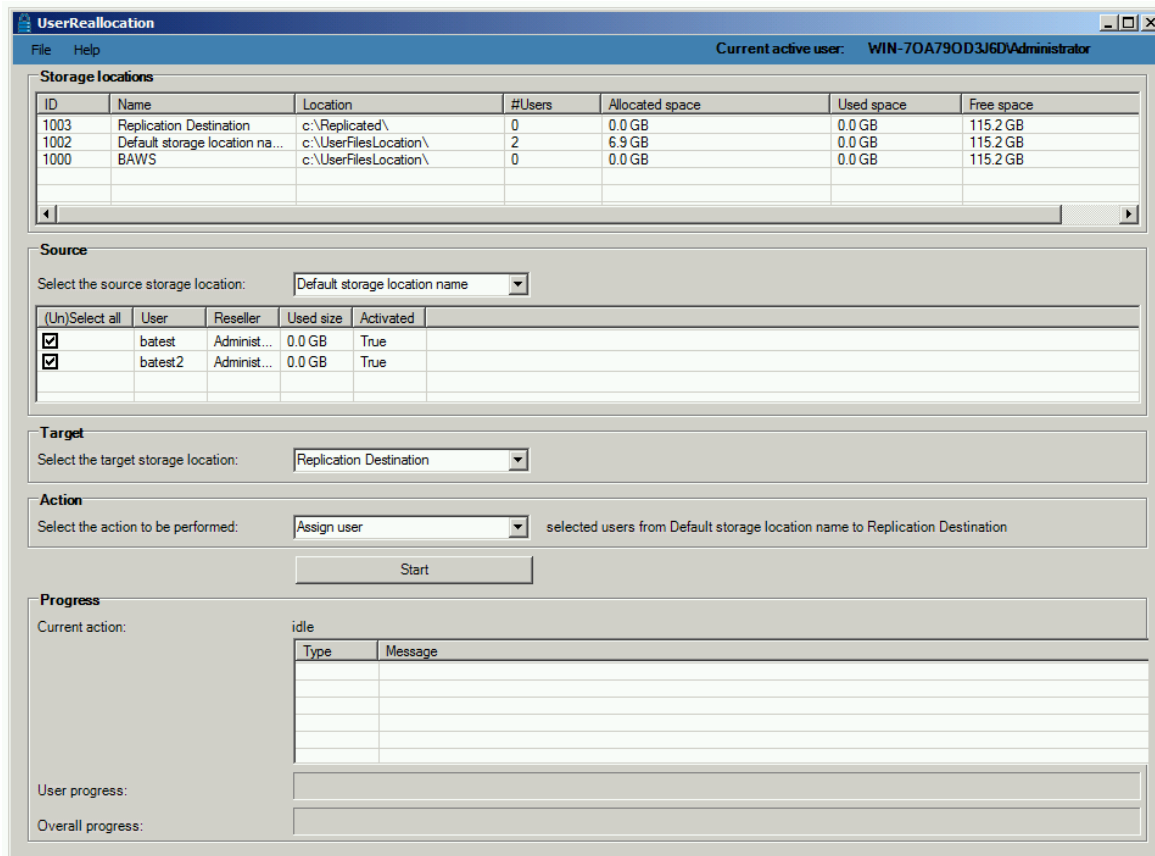
Cancel

Automatically

Reassign all users using the User Reallocation Tool. When using the User Reallocation Tool you can automatically reassign all users from one storage location to another, with or without copying the associated user data. The *User Reallocation Tool* can be downloaded from the BackupAgent support site.

Steps to reallocate using the *User Reallocation Tool*:

1. Select the backup server location (i.e. the path where BackupAgent Platform is installed)
2. Select the old storage location as source
3. Select the new storage location as destination
4. Select the correct action: **Assign users**
5. Press 'Start'



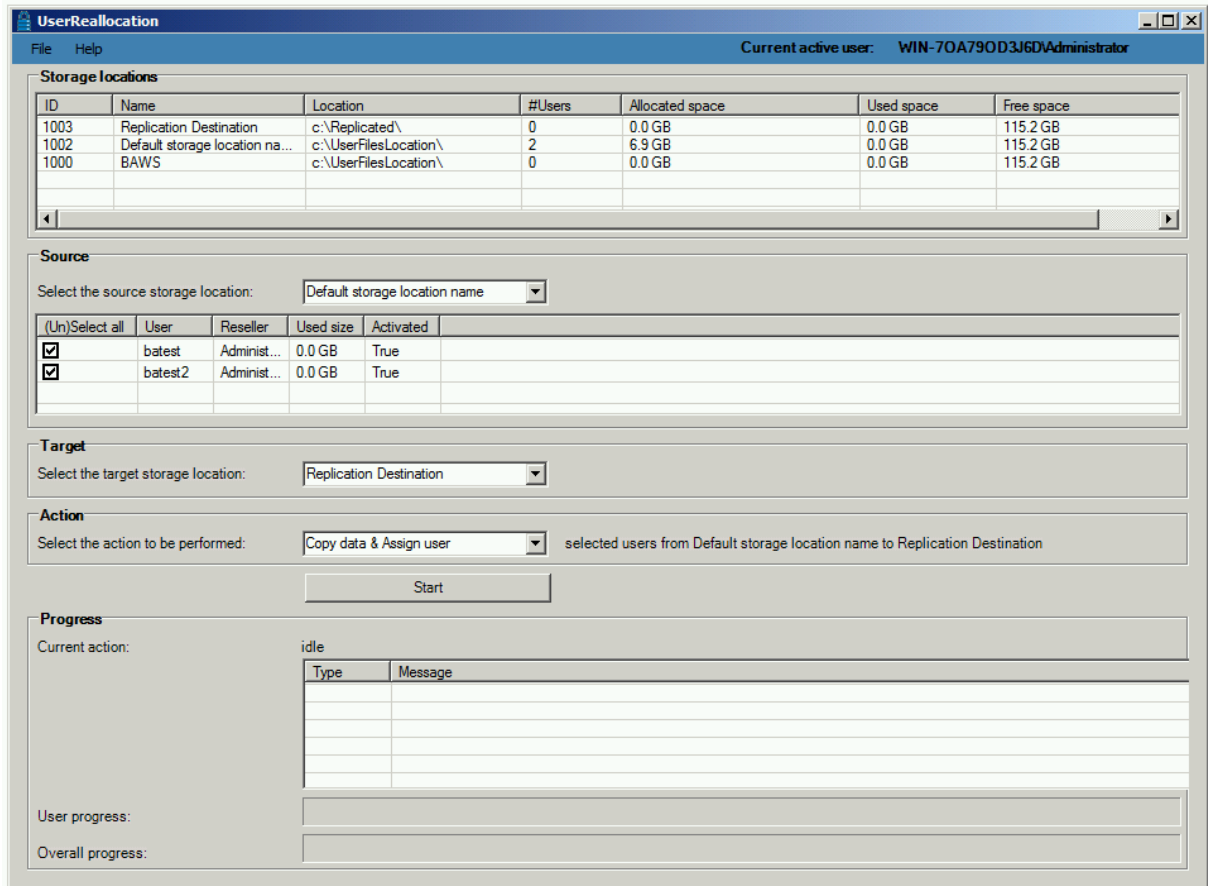
Note: Make sure, at this stage, you “Assign” users to the new location and do not “Move” users, as this option means that the tool will also try to move the user data to the new location

7.2.3 Solve the problem of the original storage location

Once the problem has been solved and the original storage location is back online, you can continue with the next step.

7.2.4 Copy data from the remote destination to the repaired storage location

You can use the *User Reallocation Tool* to copy the data from the replication destination storage location to the repaired storage location and at the same time assign accounts to the repaired storage location again.



Note: Similar as with earlier step, but now select Copy as action, if you want to leave a copy of the user data on the replication destination. By selecting this option, data still remain on the replication destination and is not being removed.