Version 12.1 Installation Guide

Audience

The **ClearReplica Installation Guide** is intended as an installation reference for those responsible for installing ClearReplica. Oft times these individuals are different than those responsible for day-to-day ClearReplica Administration. It is expected that this document is not made highly available and that copies might reside primarily with UNIX or Windows System Administrators.

For day-to-day ClearReplica Administration or help with configuring ClearReplica, refer to the **ClearReplica Administration Guide**.

ClearReplica Overview

ClearReplica is a custom add-on to IBM Rational Software ClearCase product. It serves to provide a means of providing geographically disjoint development as a less expensive alternative to ClearCase Multisite. ClearReplica provides many of the replication features of ClearCase Mulsitite as well as additional features. With ClearReplica you can replicate whole VOBs, replicate "portions" of VOBs, replicate a "single file" in a VOB or even replicate based on branch filters; you can also replicate multiple VOBs in to single VOBs, single VOBs to multiple VOBs and replicate VOBs to other VOBs within the same ClearCase region. These options allow more flexibility to create on-line backup VOBs and staging or distribution VOBs.

ClearReplica is licensed differently than ClearCase Multisite in that ClearReplica License cost is not a factor of how many VOB are replicated or how many users use those VOBs. ClearReplica is licensed per location, therefore is cost the same to replicate one VOB with one user from Atlanta to India as it does to replicate 100 VOBs with 300 users in Atlanta to India. **Sites can in many instances replace hundreds of Multisite licenses with one or two ClearReplica Licenses.** You simply need one license at each site if development is performed at both sites, or a single license at one site if the off site is just for backups or disaster recovery. This relaxed licensing result in huge upfront cost savings over traditional Multisite.

ClearReplica requires that ClearTrigger 12.10 or higher is installed at the sending and receiving site; again an unlicensed version of ClearTrigger will suffice at the receiving site if no development is performed on the receiving VOB there.

Some restrictions that exist in ClearCase Multisite are relaxed in ClearReplica. For instance, developers can work on the "same" branch at both locations for there is no Multisite mastership restriction. Geographically disjoint development teams can still work on separate branches and this is still the recommended method.

Use ClearReplica for geographically distributed development teams or use it for provide a hot backup to recover lost versions in a fraction of the time. Use ClearReplica to automatically distribute code or binaries located in a directory in a VOB without having to use the bandwidth of replicating the whole VOB. Replicate portions of the VOB to teams all over the world or across the hall. Simply install and configure ClearReplica on top of a ClearTrigger installation and get started!

Customer Support

To obtain additional information on ClearReplica or other services offered by A Better Solution, Inc., visit our web site at www.abs-consulting.com. To report problems with the ClearReplica software or documentation, please send e-mail to clearreplica_team@abs-consulting.com.

Supported Platforms

ClearReplica integrates with ClearCase installations running ClearTrigger 10.3 and higher. The system requirements for ClearReplica are consistent with those used to run ClearCase versions 3.2 and higher. ClearReplica will operate in a mixed version environment as well as a mixed OS environment. The following operating systems are supported for ClearReplica:

- **WINDOWS:**
  - **Windows 9x**
  - **Windows NT**
  - **Windows 2000 and higher**
- **UNIX:**
  - **Solaris**
  - **SunOS**
  - **HP-UX**
  - **RedHat Linux**
  - **AIX**
  - **CentOS**
  - **SUSE Linux**
  - **Solaris X86**

Installing ClearReplica

There are two (2) methods to install ClearReplica, the automated installation and the classic method, which is a manual process. The table below depicts the supported architectures for ClearReplica as it relates to the install methods.

Supported ClearReplica Architecture	Automated Installation supported	Classic (manual) install supported
Windows	**Yes**	**Yes**
HP11 and higher	**Yes**	**Yes**
Sun56 and higher	**Yes**	**Yes**
AIX	**Yes**	**Yes**
Linux (RedHat)	**Yes**	**Yes**
CentOS	**Yes**	**Yes**
Solaris X86	**No***	**Yes**
SUSE Linux	**No***	**Yes**

ClearReplica is process-only software, there is no user interaction or user commands, so it generally only needs to be installed on one machine per site. The selected machine should have file system access to the associated **ClearTrigger Depot** and ClearCase access to the VOBs being replicated. If the selected machine is of an architecture that supports an automate installation, then you can select that installation executable for that architecture to perform the install. Each installation can install all of the binaries needed to run ClearReplica on ***that*** architecture, but the installation will support replication to other architectures. For example if you have 300 clients with a mix of HP11, SUN and Windows architectures you can select a single machine from either architecture to "talk" to a representative client of the "receiving" ClearReplica site for the install.

If you are installing ***from*** any of the InstallShield supported architectures: Windows, HP, Sun, AIX, RedHat Linux or CentOS then you may proceed to the section entitled **Automated ClearReplica Install** for installation instructions or if you prefer, the section entitled **Manual ClearReplica Install** for manual install instructions*.

Note: * You can proceed to the **Manual ClearReplica Install** section for this architecture or perform the automated install from a machine in your network of an architecture that supports the automated install.

Automated ClearReplica Install

ClearReplica must be installed on a machine that has file system access to the associated ClearTrigger Depot (preferably local file system access) and ClearCase access to the VOBs that will be replicated. ClearReplica will also need access to a dedicated ClearCase view. This installation procedure can be used for any of the supported platforms. You must download the appropriate installer for the architecture you are installing from. The table below depicts the supported architectures that ClearReplica can be installed from using the automated installation. The installer executables can be downloaded from the ABS website at the ABS **Download Center** (http://www.abs-consulting.com).

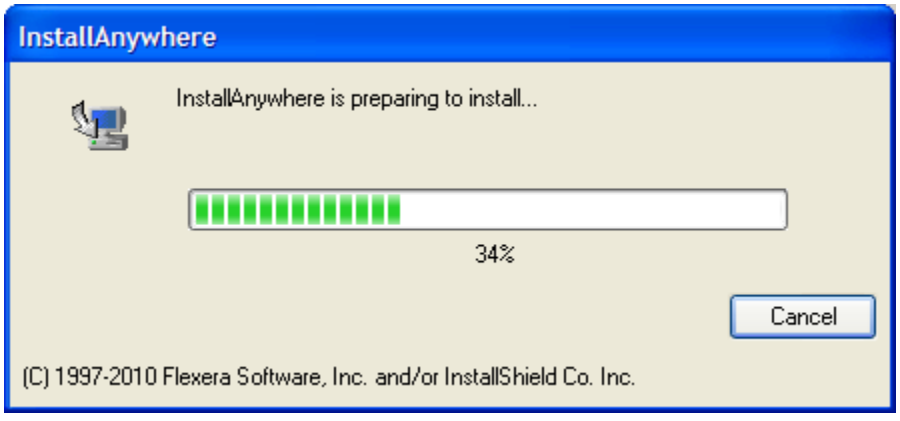
Supported ClearReplica Architecture	Installation executable
Windows	install_clearreplica.exe
HP11 and higher	install_clearreplica.bin
Sun56 and higher	install_clearreplica.bin
AIX	install_clearreplica.bin
Linux (RedHat)	install_clearreplica.bin
CentOS	Install_clearreplica.bin

Download the appropriate installer executable and place on a machine of the appropriate architecture.
If that installer is for a UNIX architecture then ensure that the execute bit is on for the installer:

(i.e. **chmod 700 install_clearreplica.bin** or similar)

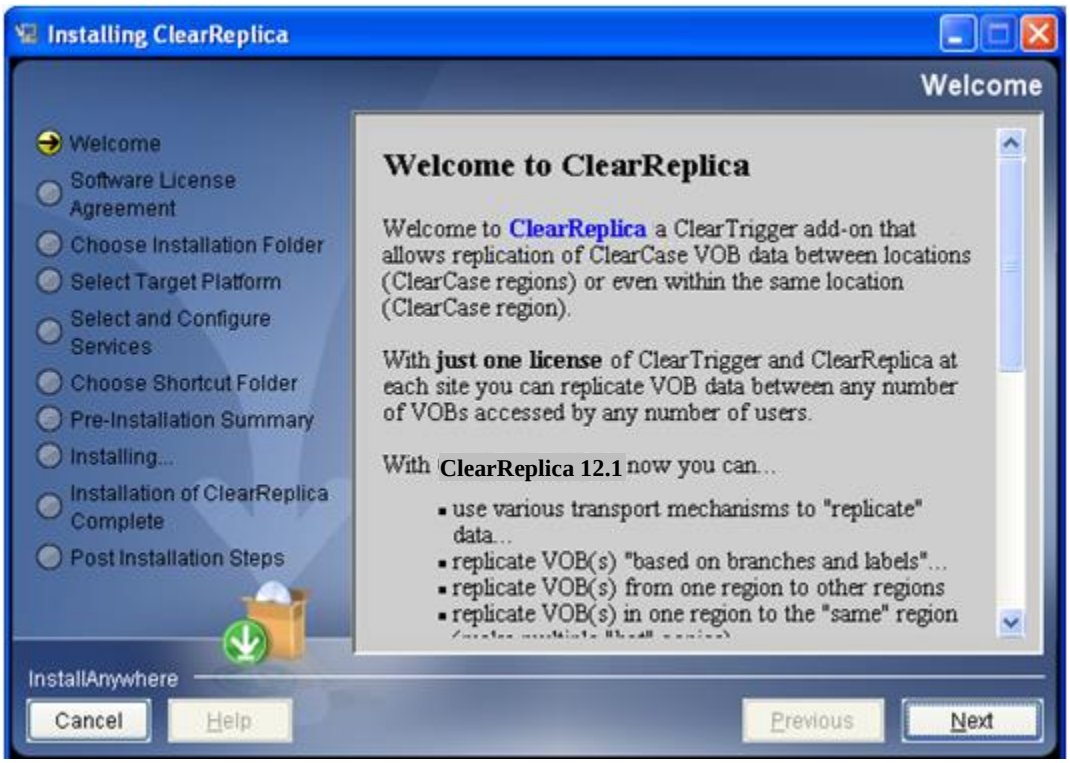
Then for either Windows or Unix execute the installer.

Once started you will see output or dialogs similar to the ones that follow if using Windows:

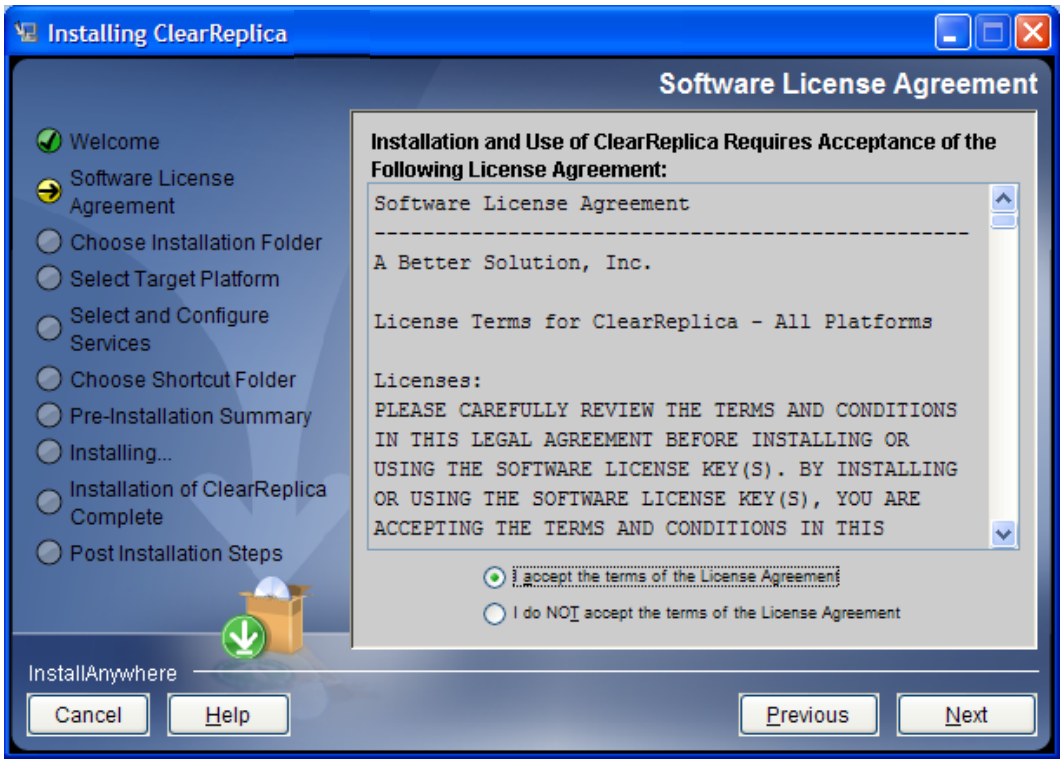


or see output that the installer is extracting the Java Virtual Machine if on a UNIX architecture.

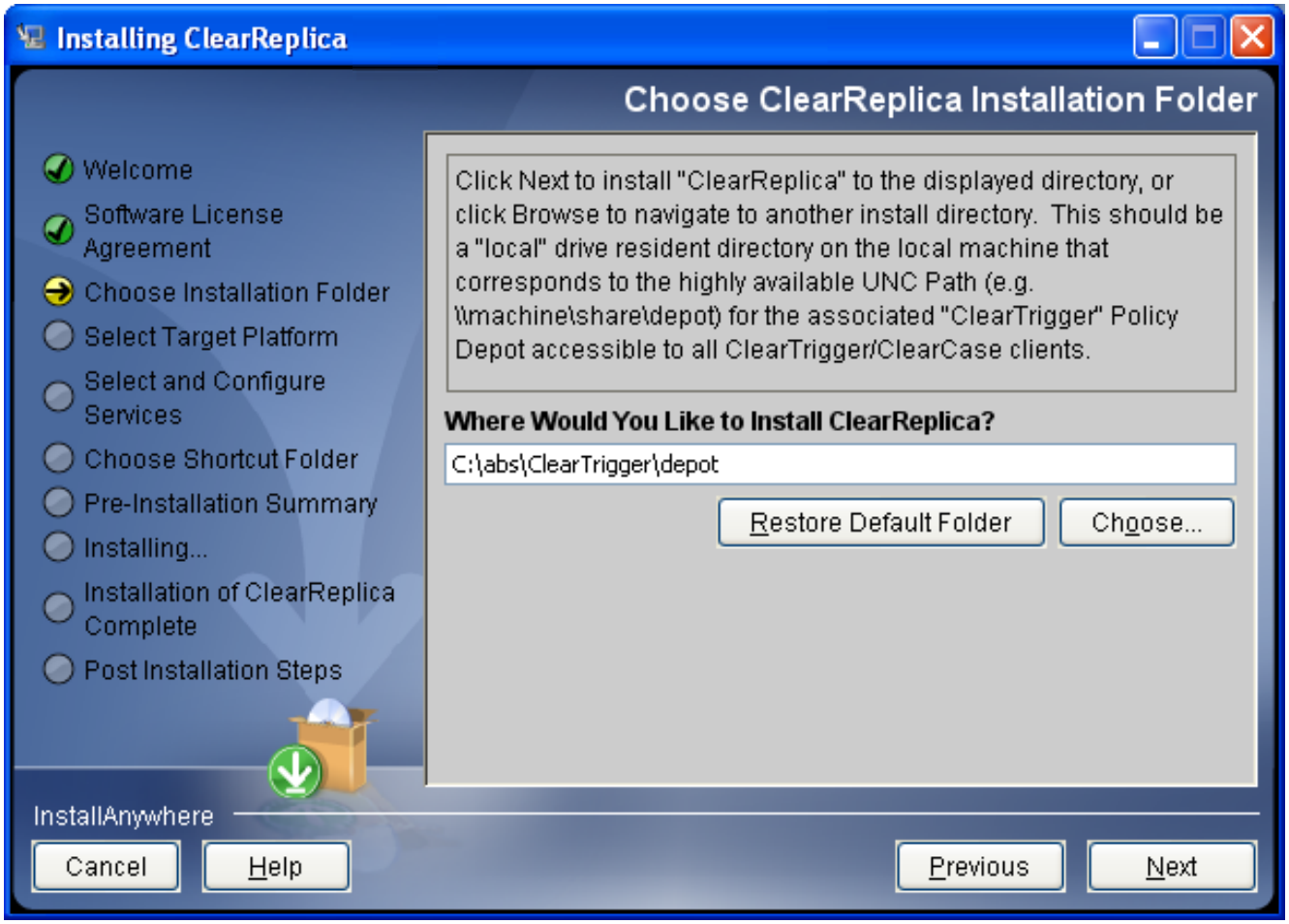
Select “Next” when you see this panel to continue or “Cancel” to stop the install.



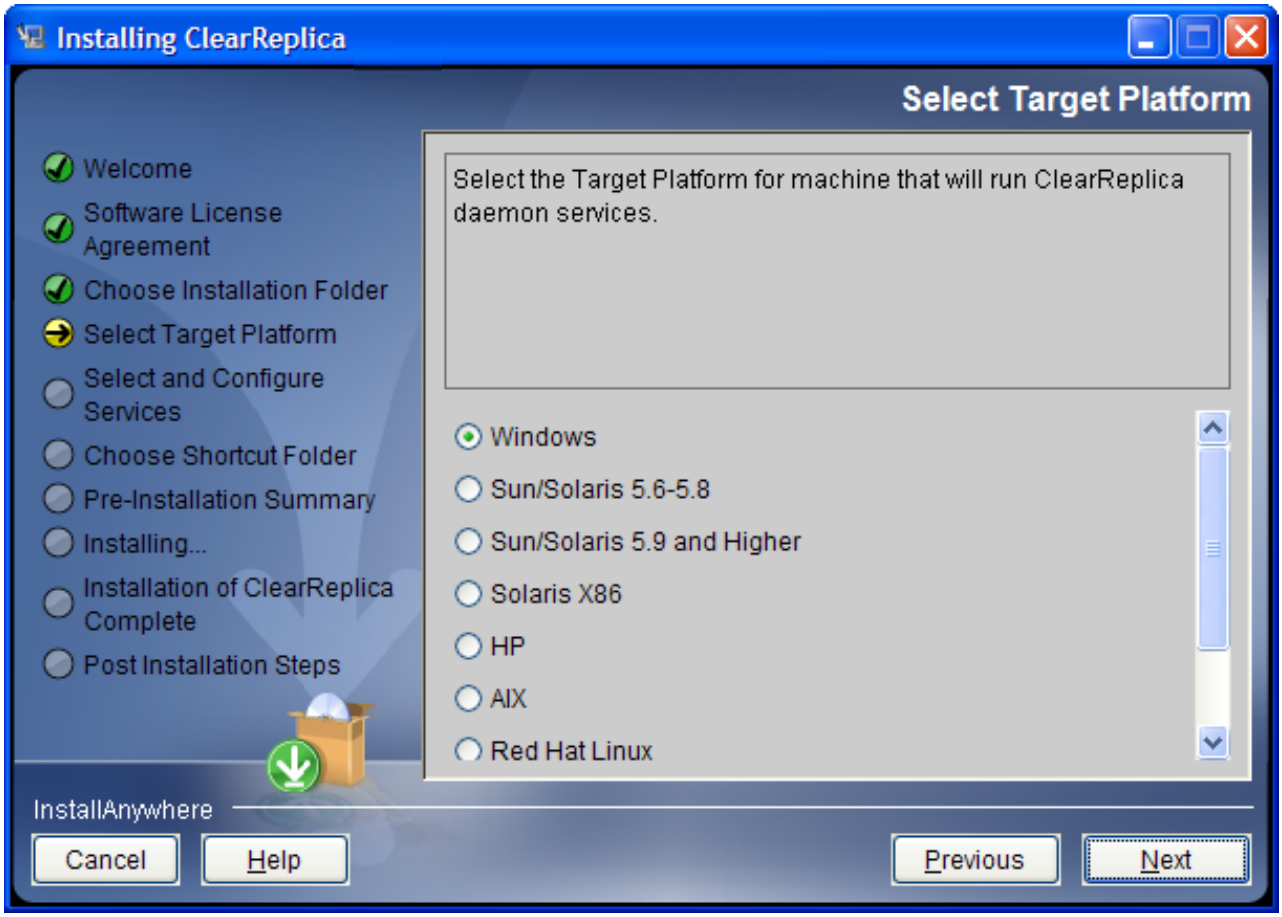
Read the license agreement and if you agree then accept the terms of the license agreement and select “Next” to continue the install.



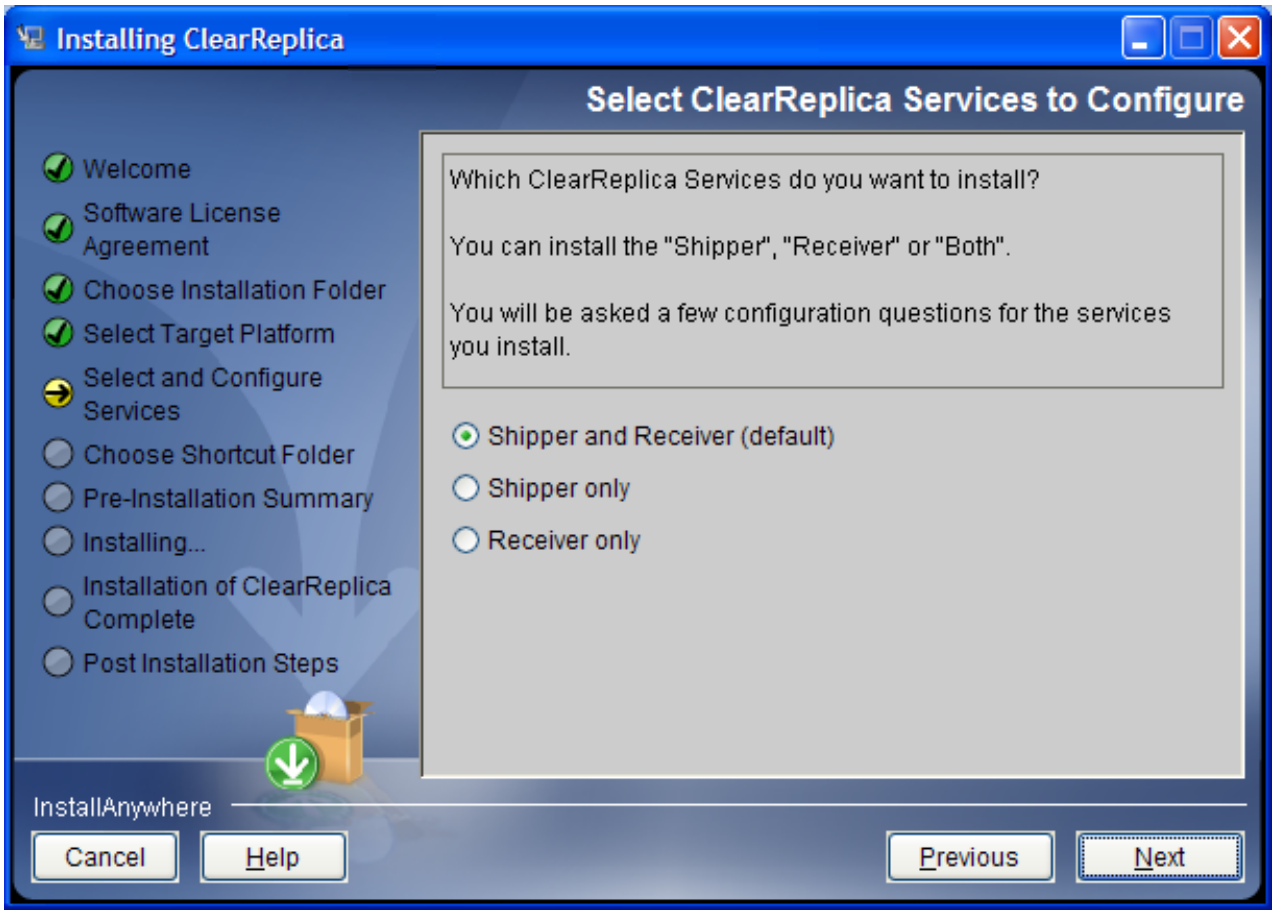
Input the path to the existing ClearTrigger depot (ClearTrigger version 10.3 or higher). If the selected directory is not an existing depot for ClearTrigger 10.3 or higher then you will be asked to reselect or cancel the installation



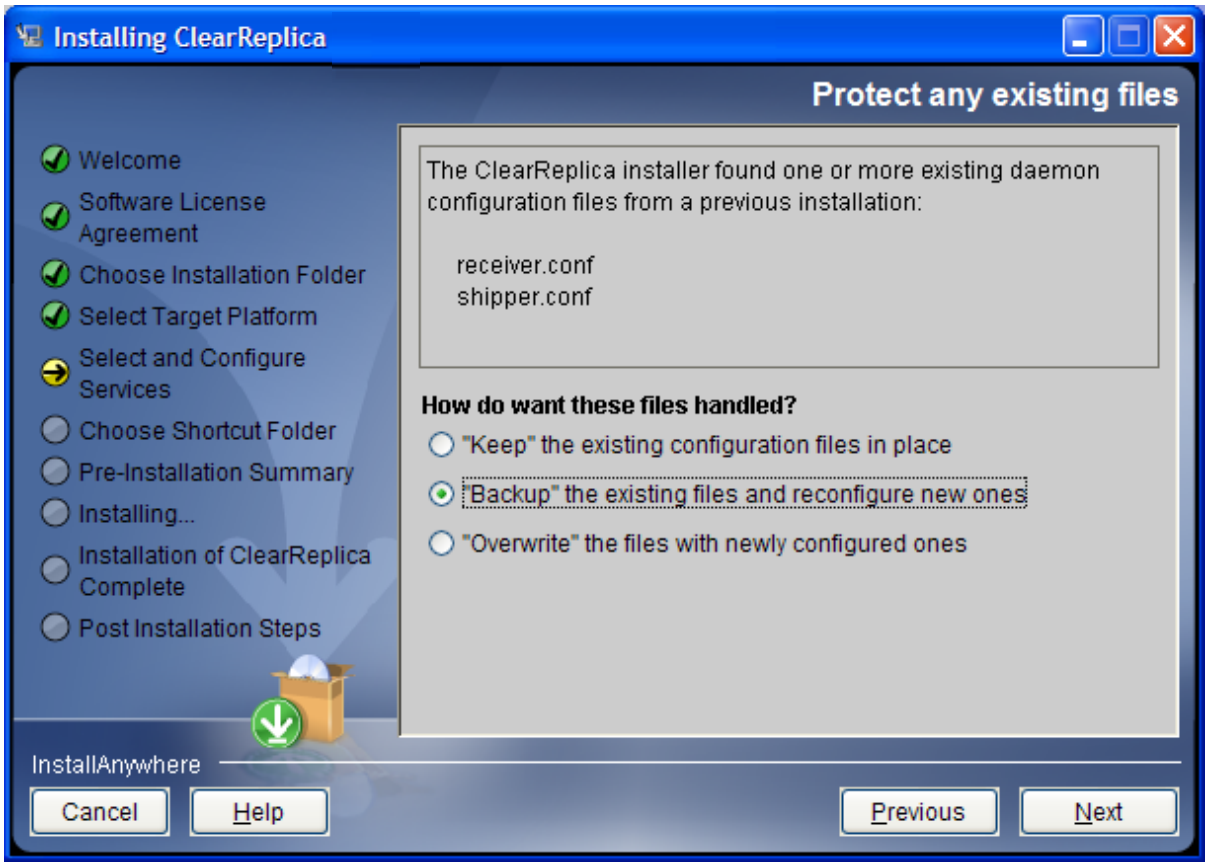
Select the target platform that will run the daemon processes. This is usually just one machine in the network (so one platform) and might be a machine (and platform) different than the one you are installing from. Select the target platform and enter "Next" to continue.



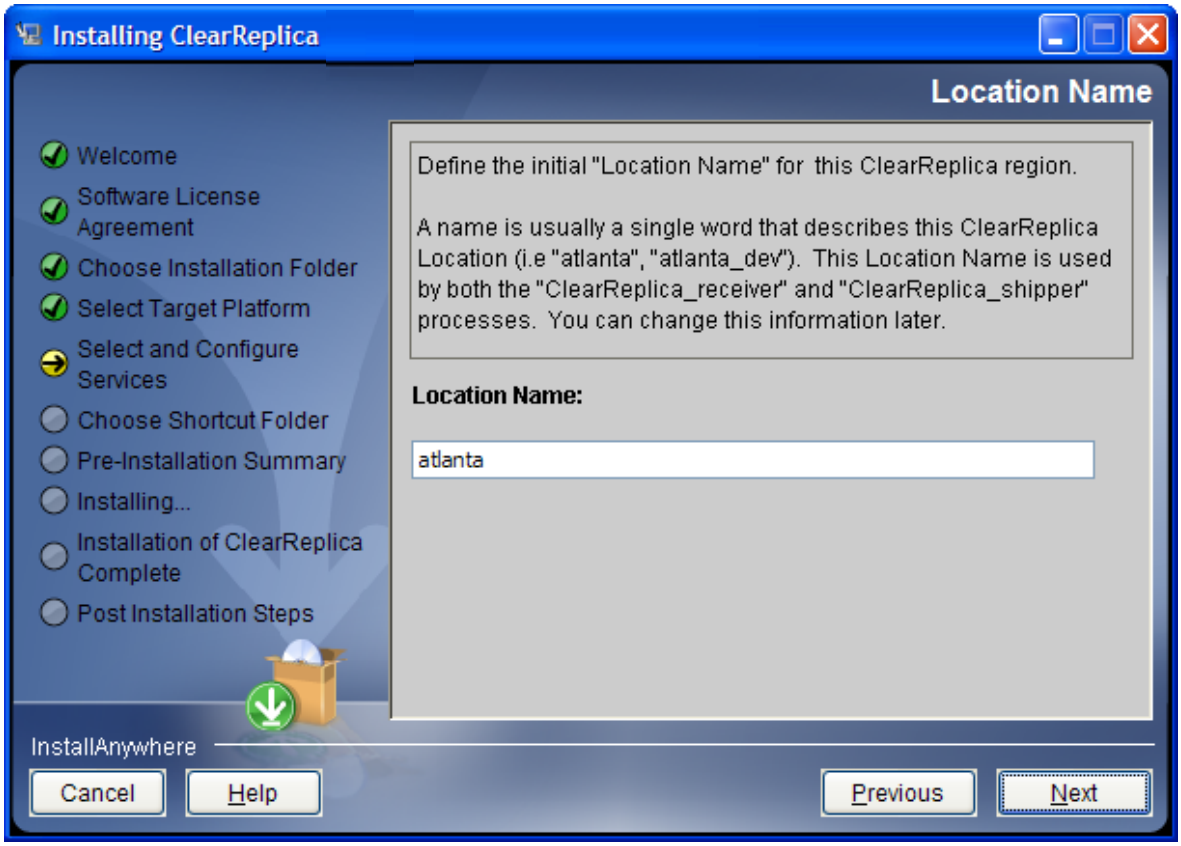
Select the type of install you intend to perform. If you intend for the target machine perform ClearReplica "shipper" and "receiver" activities than select the "Shipper and Receiver" option. If you intend only to replicate to a disaster recovery or distribution only location then only the shipper is required at the sender location while just the "receiver" is required at the disaster recovery or distribution only location. If you are not sure then select the "Help" option to see more details. The default option, "Shipper and Receiver" is preselected and the product in total is less than 20 Meg of disk space in total binaries themselves about 5 Meg with the rest being documentation.



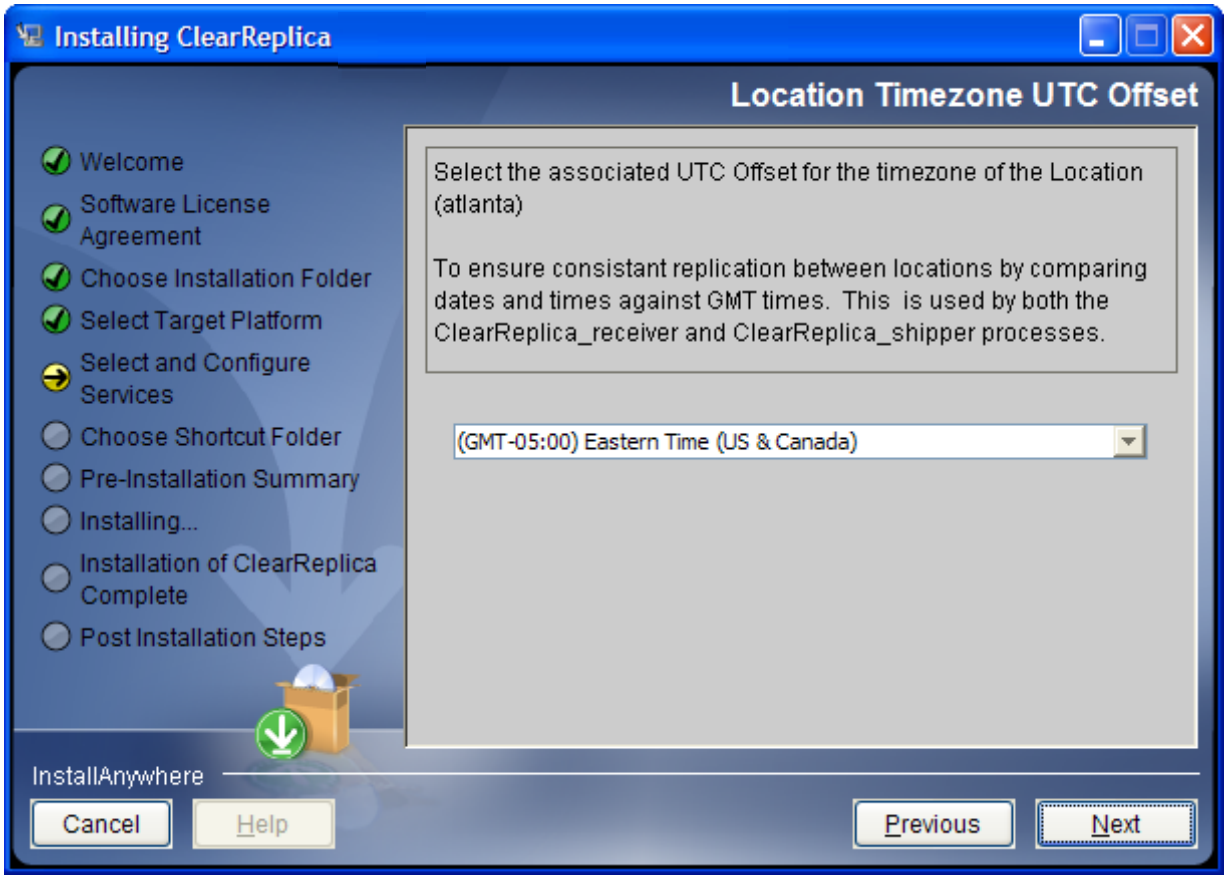
If shipper or receiver configuration files form a previous install of ClearReplica exist, you will see an information panel similar to the one below. Decide how you want these existing files to be handled and make the appropriate selection. **For new installs this panel is not displayed.**



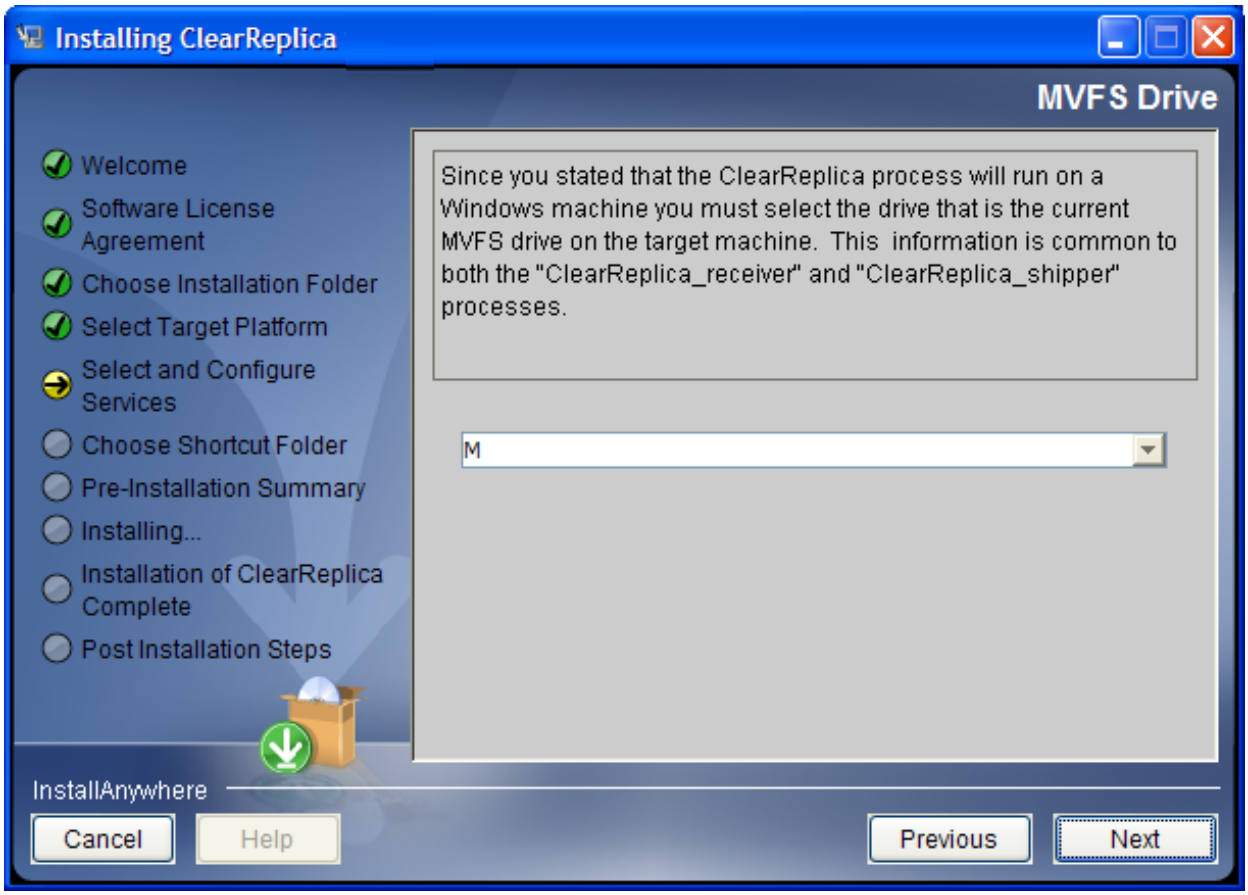
If you are creating a new installation or have elected to modify an existing one, you are shown the panel below. Provide a Location Name that is used to refer to this ClearReplica Region. Input the Location Name and then select "Next" to continue.



If you are creating a new installation or have elected to modify an existing one, you are shown the panel below. Select the appropriate time zone for this Location then select "Next" to continue.

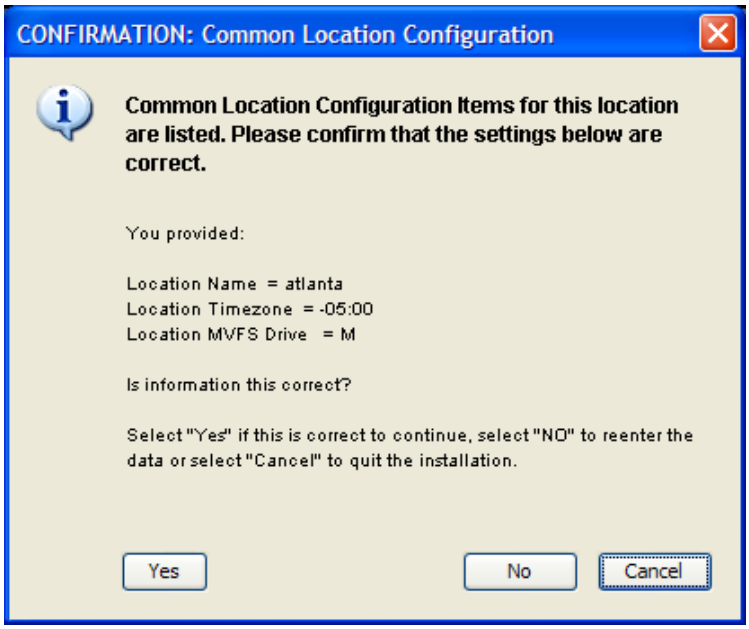


If you are creating a new installation or have elected to modify an existing one and you have selected "Windows" are your target platform, you are shown the panel below. Select the drive that is the "MVFS" drive on the Windows machine that will be the "shipper" or "receiver" machine then select "Next" to continue. If the target platform is a UNIX platform then this panel is not displayed.

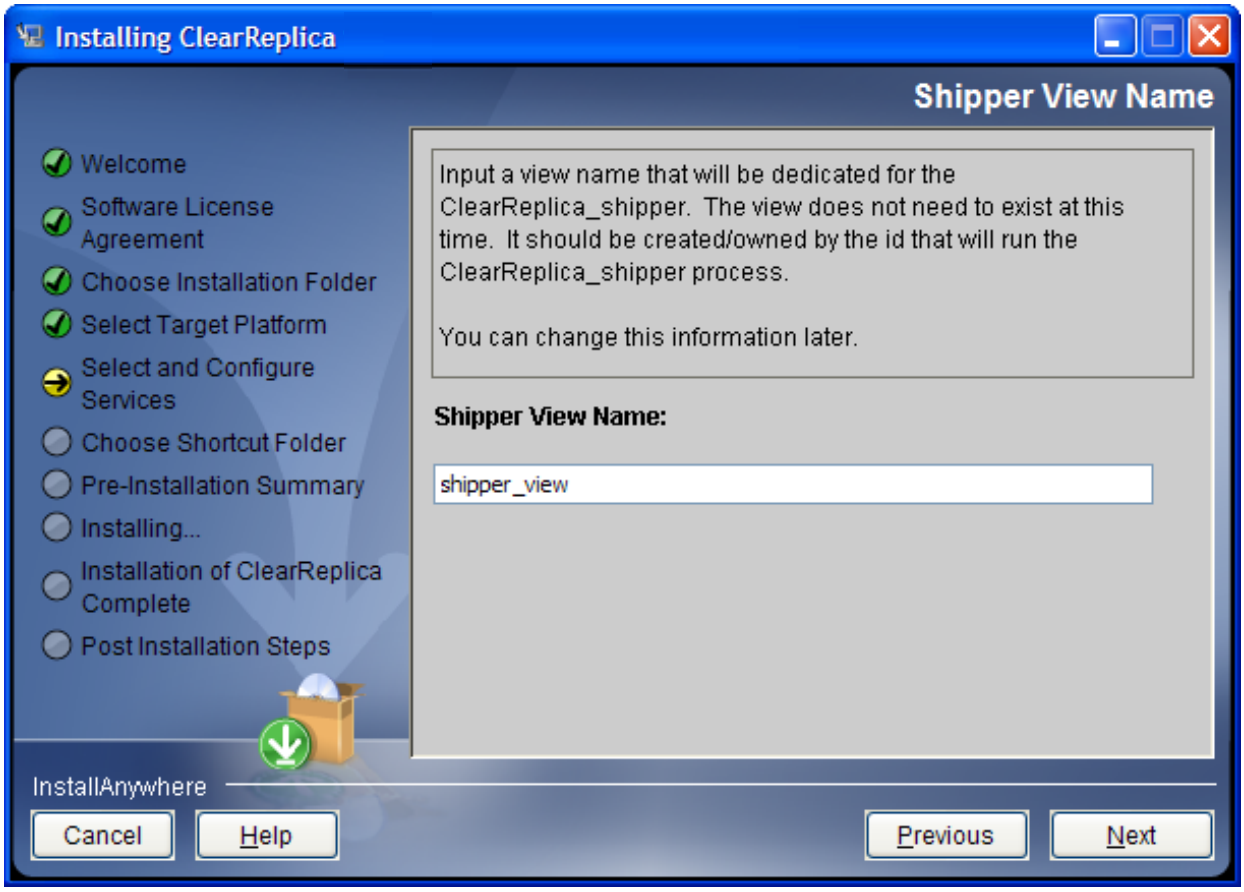


Once you have selected "Next" you are shown a confirmation dialog that displays the common configuration information you have provided.

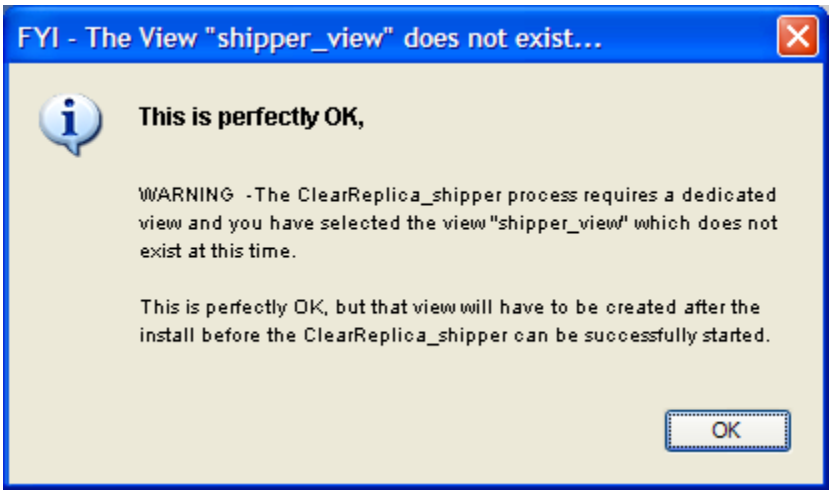
Select "Yes" to confirm and continue. Select "No" to re-input this data or select "Cancel" to abort the installation.



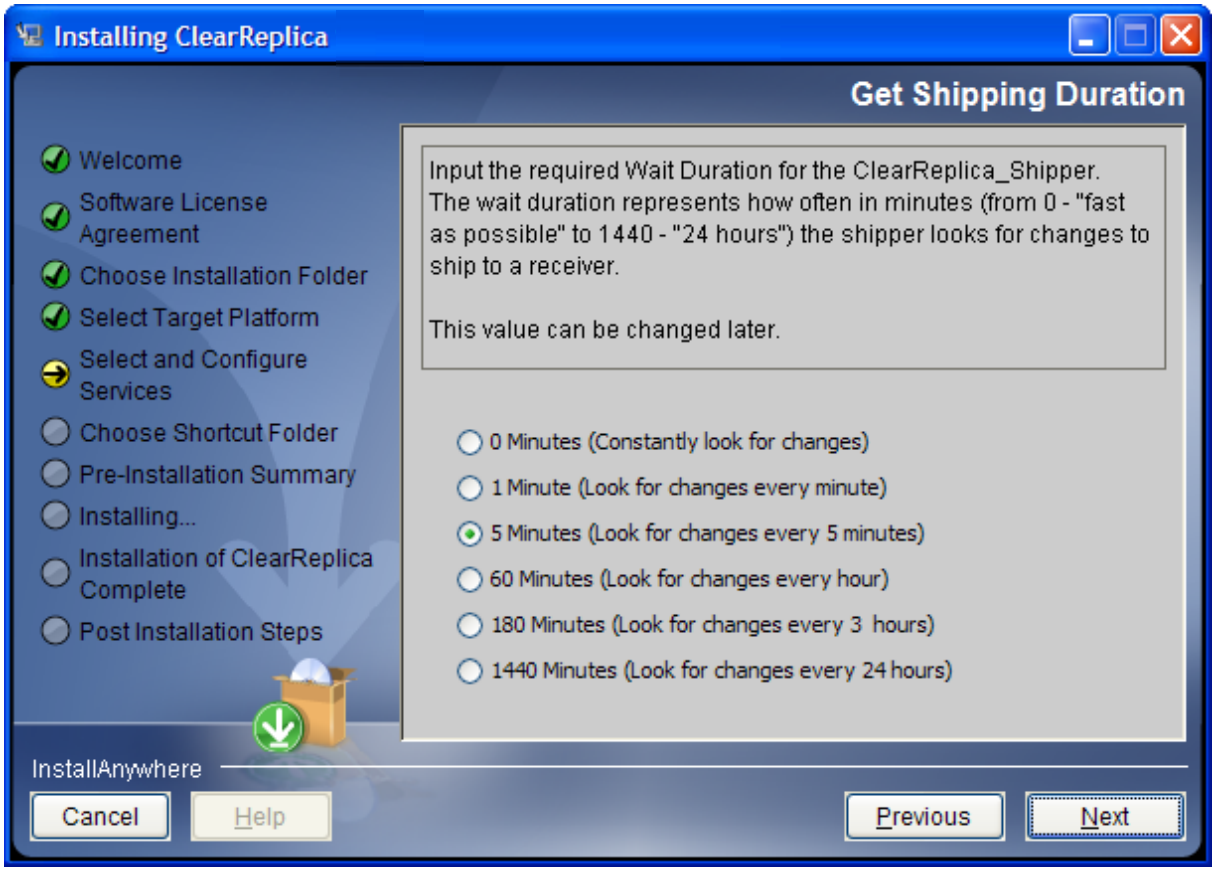
If you are creating a new installation or have elected to modify an existing one and have elected to install the ClearReplica "shipper", you are shown the panel below. Provide the name of the view that will be dedicated for exclusive use of ClearReplica shipper processes and then select "Next" to continue.



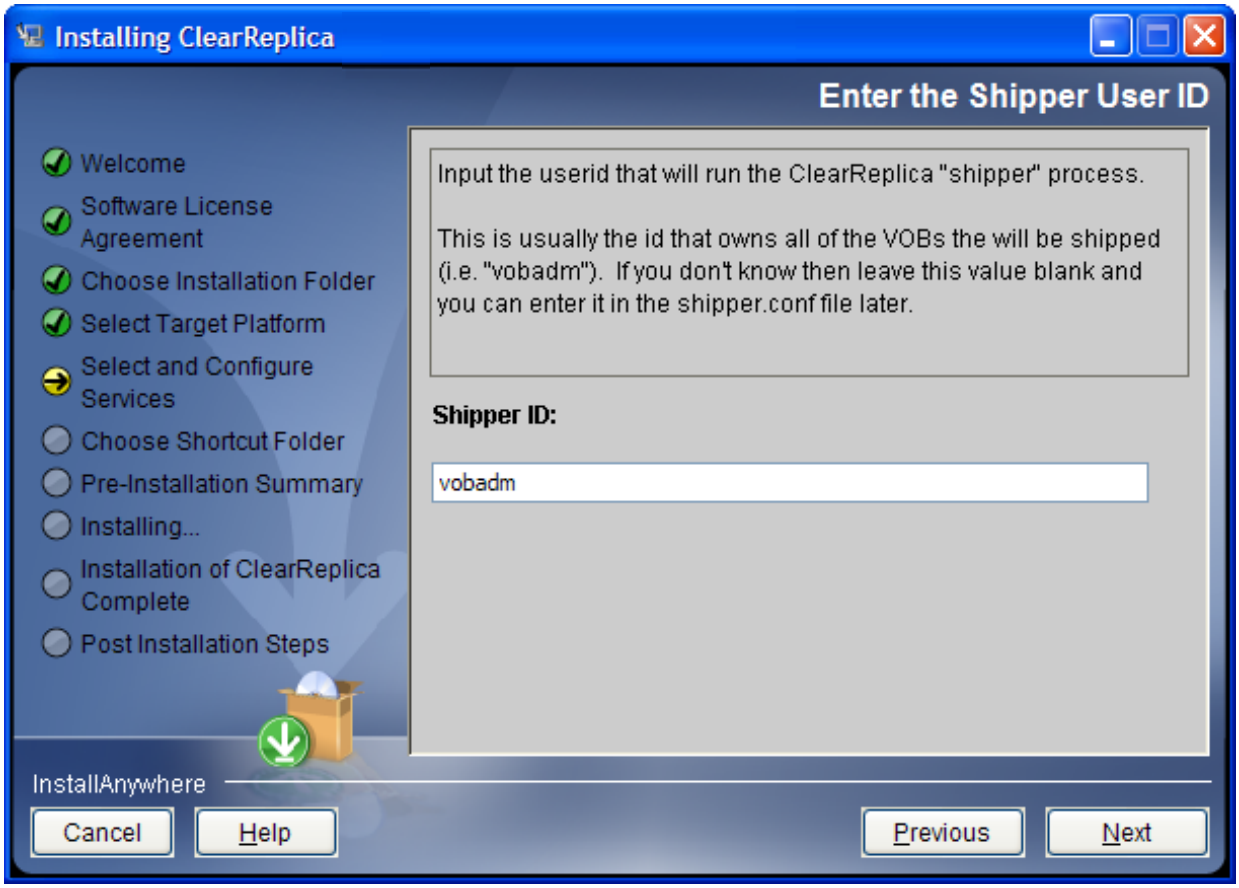
The installer will try to verify the existence of the view and provide a warning if it does not.



If you are creating a new installation or have elected to modify an existing one and have elected to install the ClearReplica "shipper", you are shown the panel below. Select how long you want the ClearReplica Shipper to wait before it looks for changes to send to other sites after processing the last change set and then select "Next" to continue.

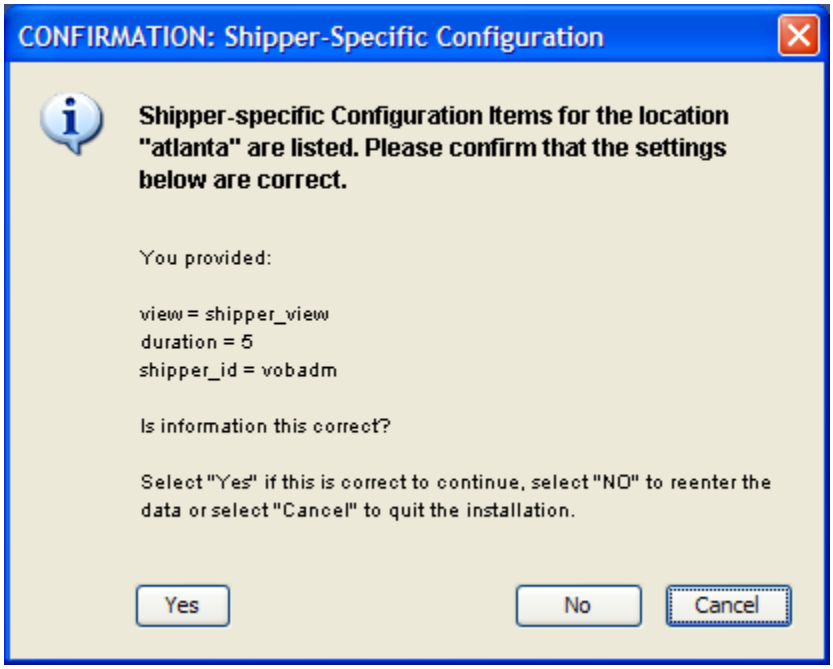


If you are creating a new installation or have elected to modify an existing one and have elected to install the ClearReplica "shipper", you are shown the panel below. Input the userid that you want to allow to run the ClearReplica shipper, usually the common VOB owner account (i.e. vobadm) and then select "Next" to continue.

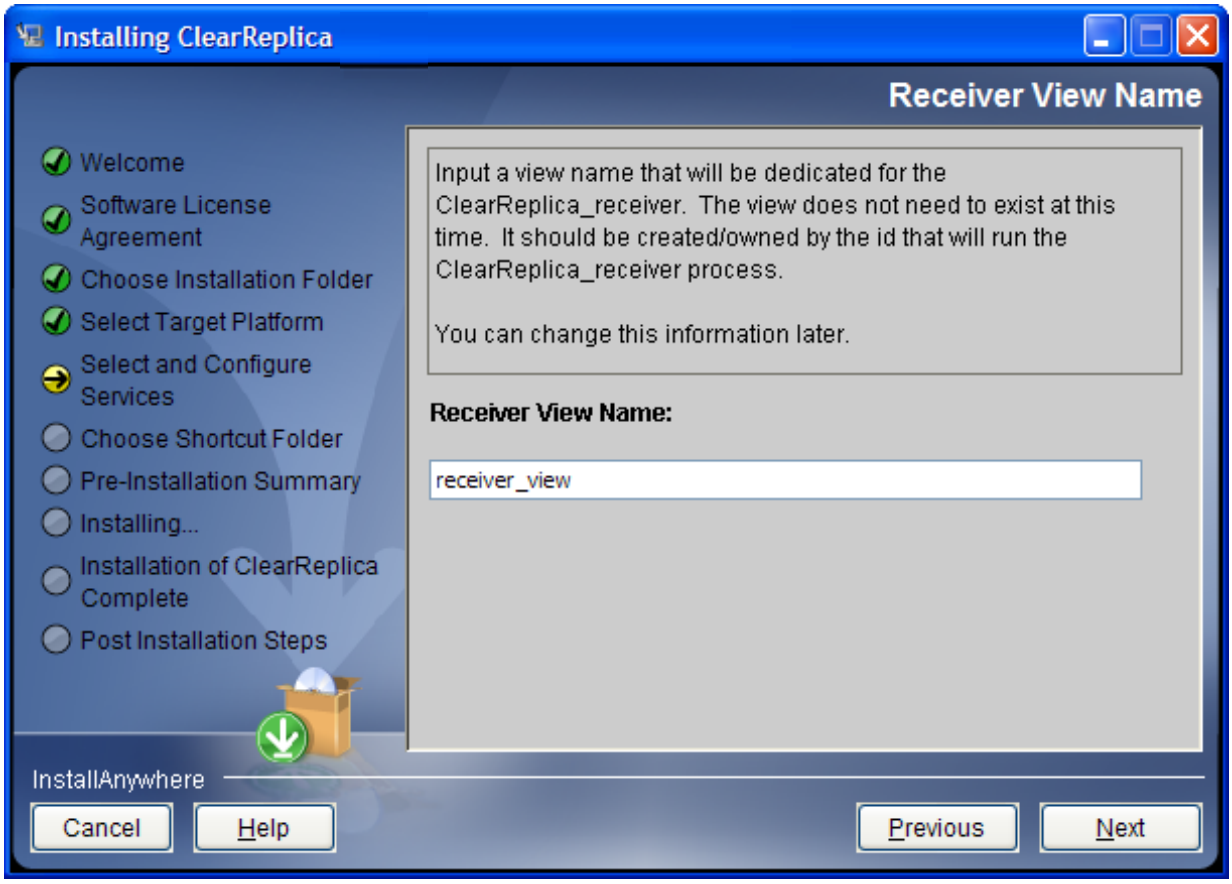


Once you have selected "Next" you are shown a confirmation dialog that displays the shipper-specific configuration information you have provided.

Select "Yes" to confirm and continue. Select "No" to re-input this data or select "Cancel" to abort the installation.

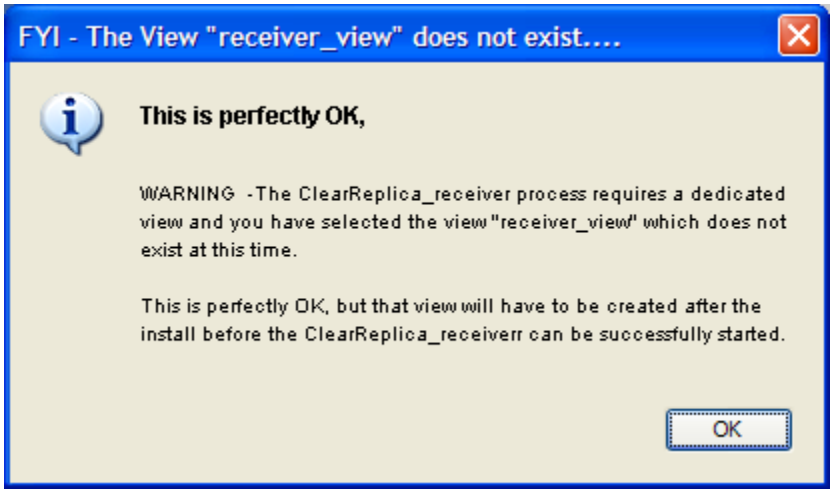


If you are creating a new installation or have elected to modify an existing one and have elected to install the ClearReplica "receiver", you are shown the panel below. Provide the name of the view that will be dedicated for exclusive use of ClearReplica receiver processes and then select "Next" to continue.

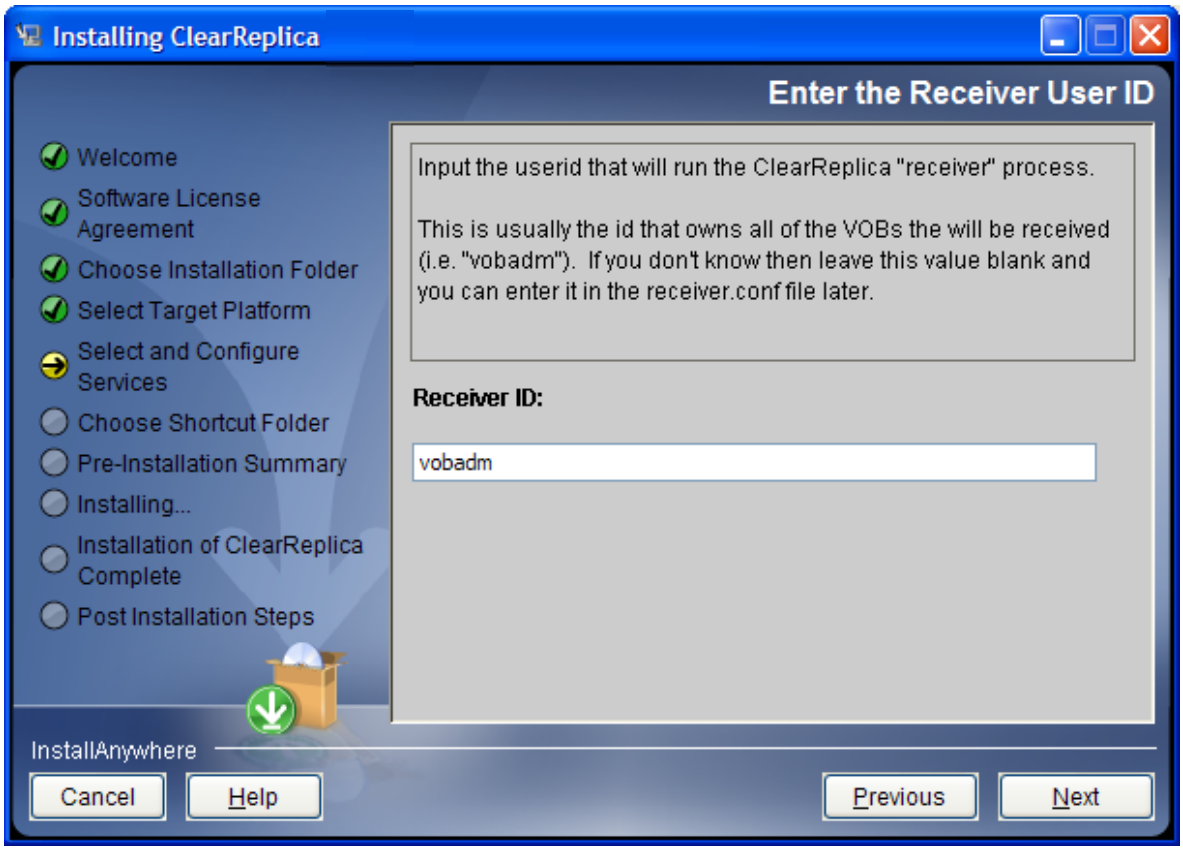


The installer will try to verify the existence of the view and provide a warning if it does not.

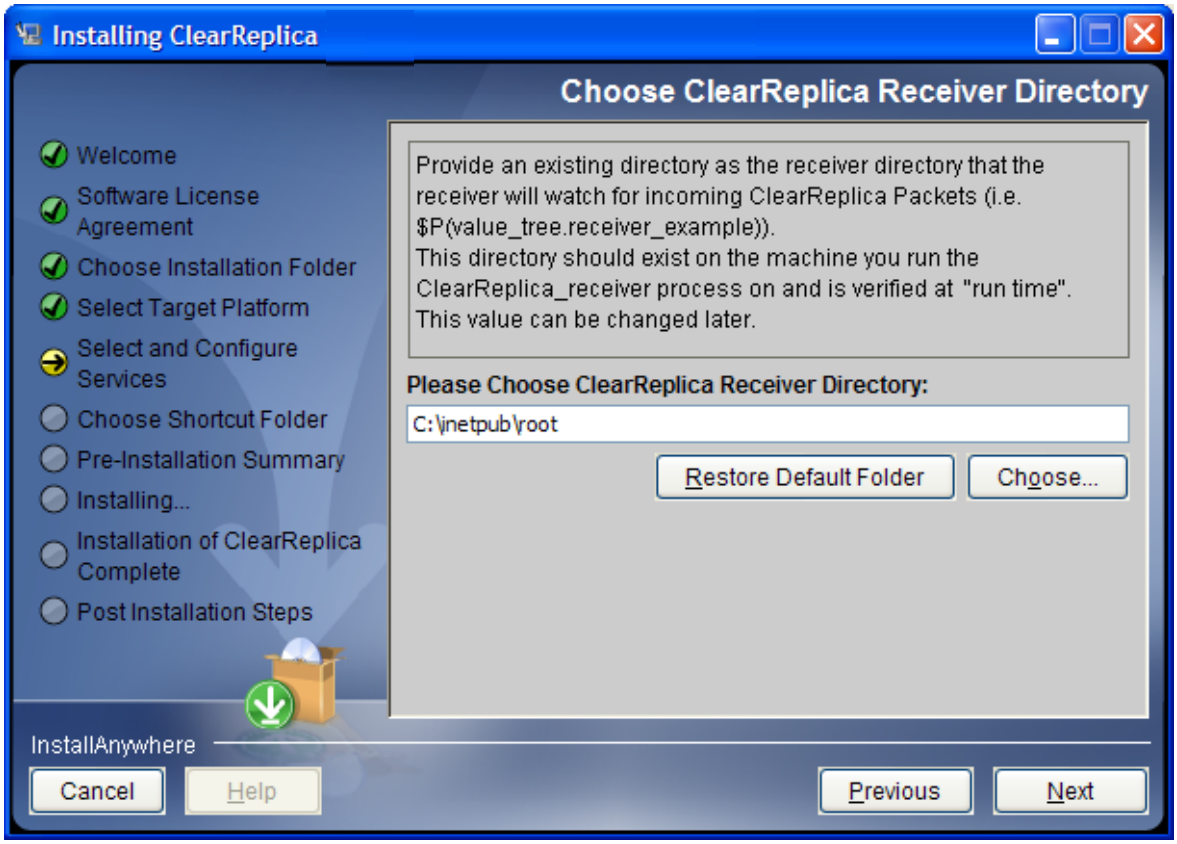
The view cannot be the same view used for the ClearReplica shipper.



If you are creating a new installation or have elected to modify an existing one and have elected to install the ClearReplica "receiver", you are shown the panel below. Provide the name of the view that will be dedicated for exclusive use of ClearReplica receiver processes and then select "Next" to continue. The installer will try to verify the existence of the view and provide a warning if it does not.

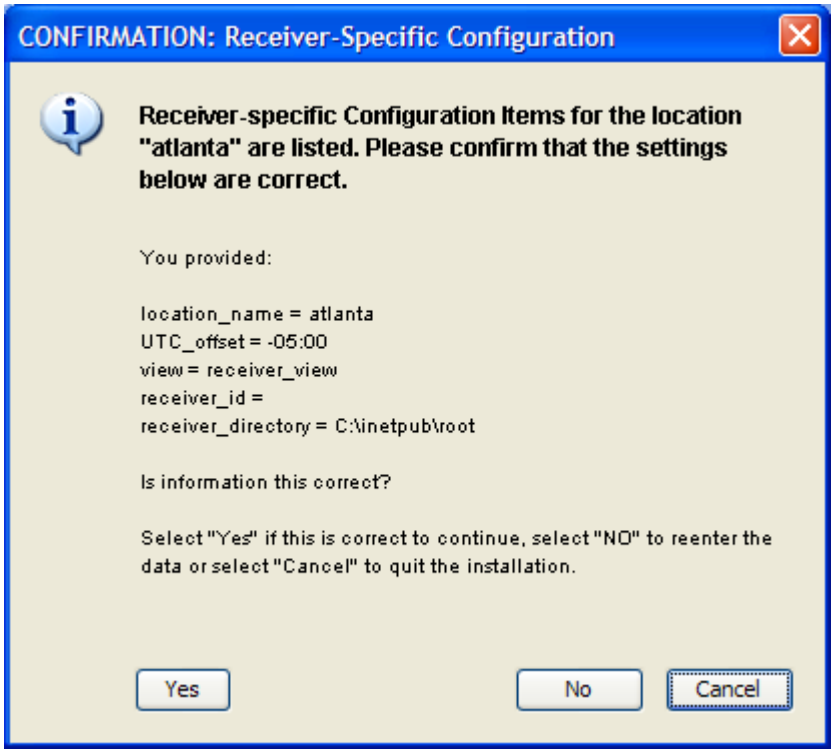


If you are creating a new installation or have elected to modify an existing one and have elected to install the ClearReplica "receiver", you are shown the panel below. Provide the directory that the "receiver" will "watch" for incoming ClearReplica packets from other locations then select "Next" to continue.

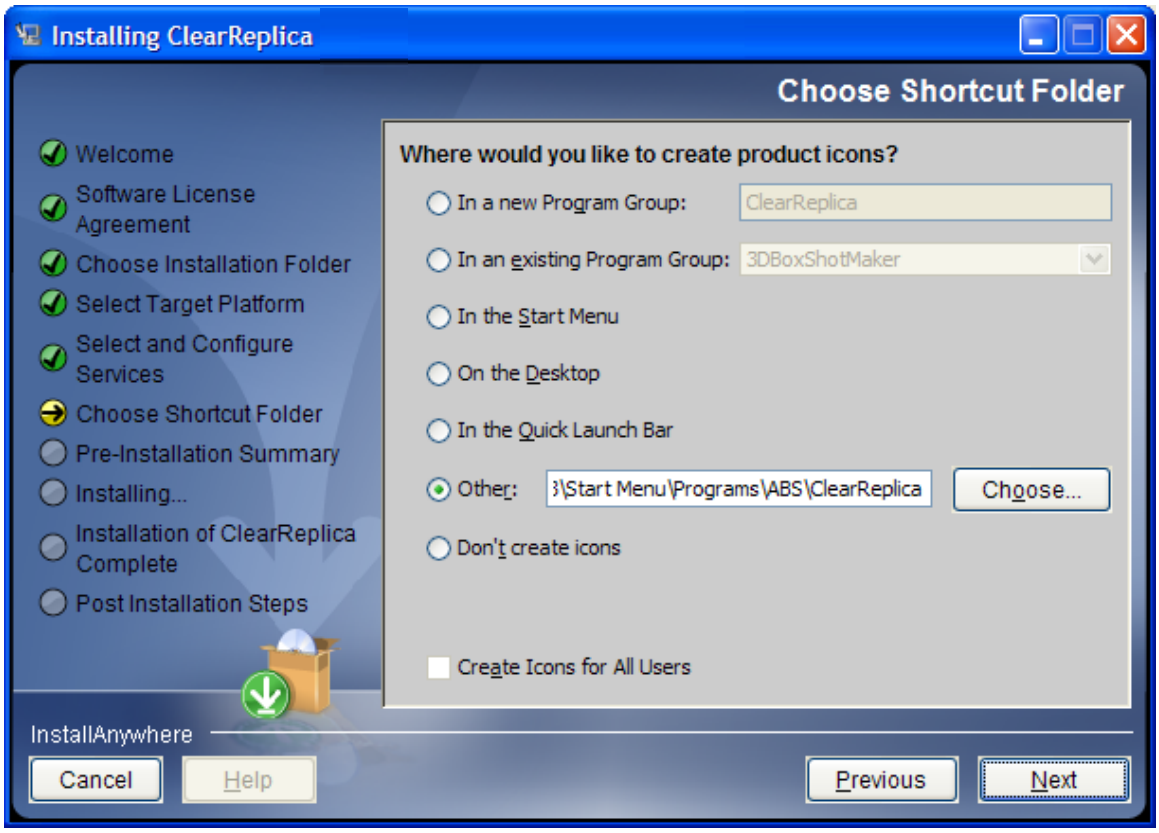


Once you have selected "Next" you are shown a confirmation dialog that displays the receiver-specific configuration information you have provided.

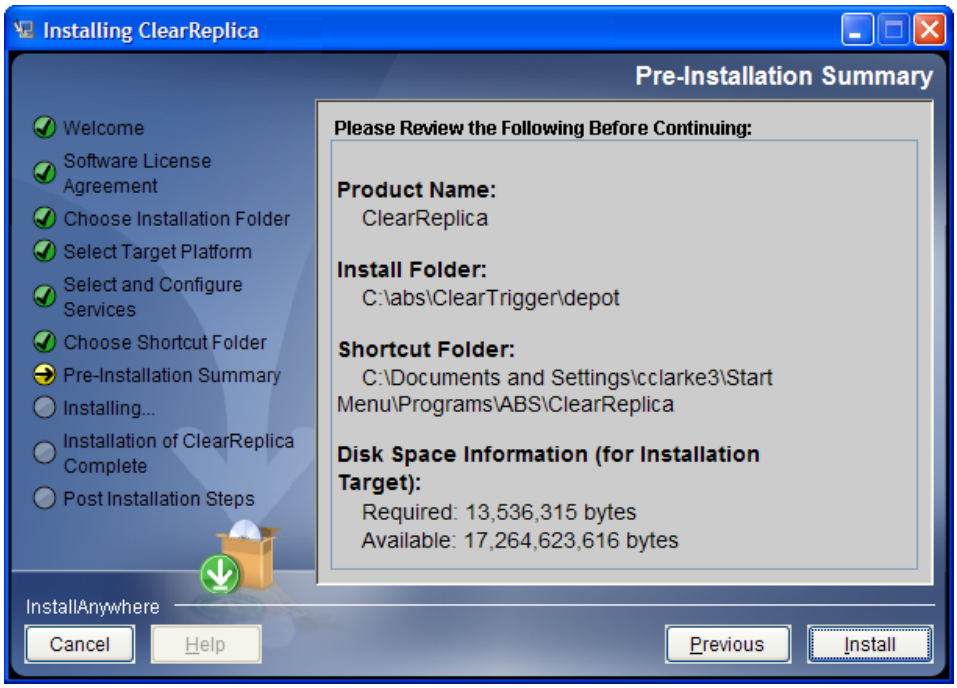
Select "Yes" to confirm and continue. Select "No" to re-input this data or select "Cancel" to abort the installation.



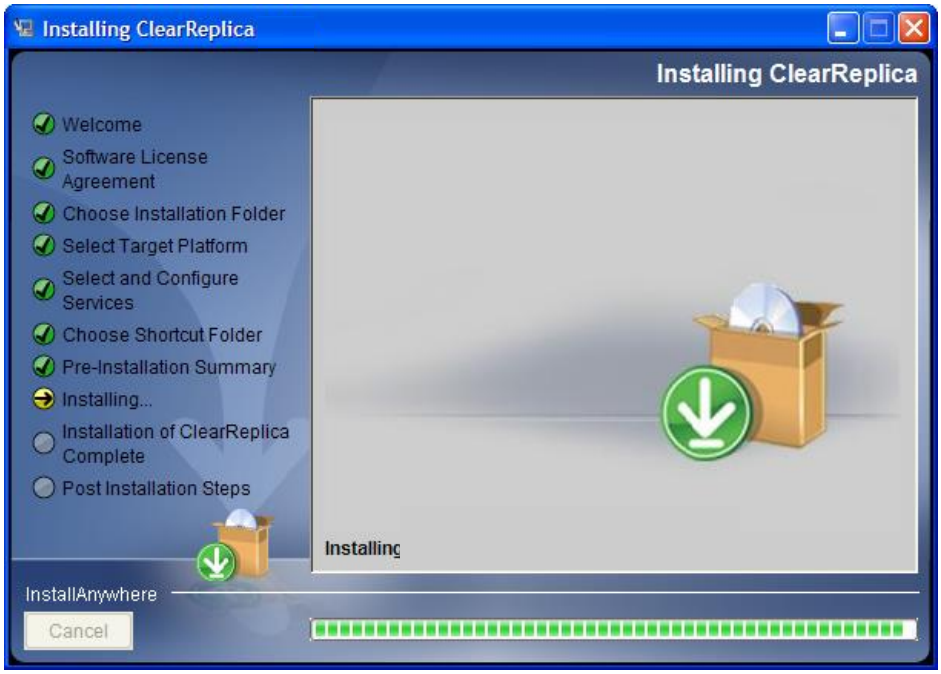
If you are creating this installation from a Windows machine you are provided this additional pane to allow you to configure where shortcuts ore menu items appear. Make your selection then select "Next" to continue.



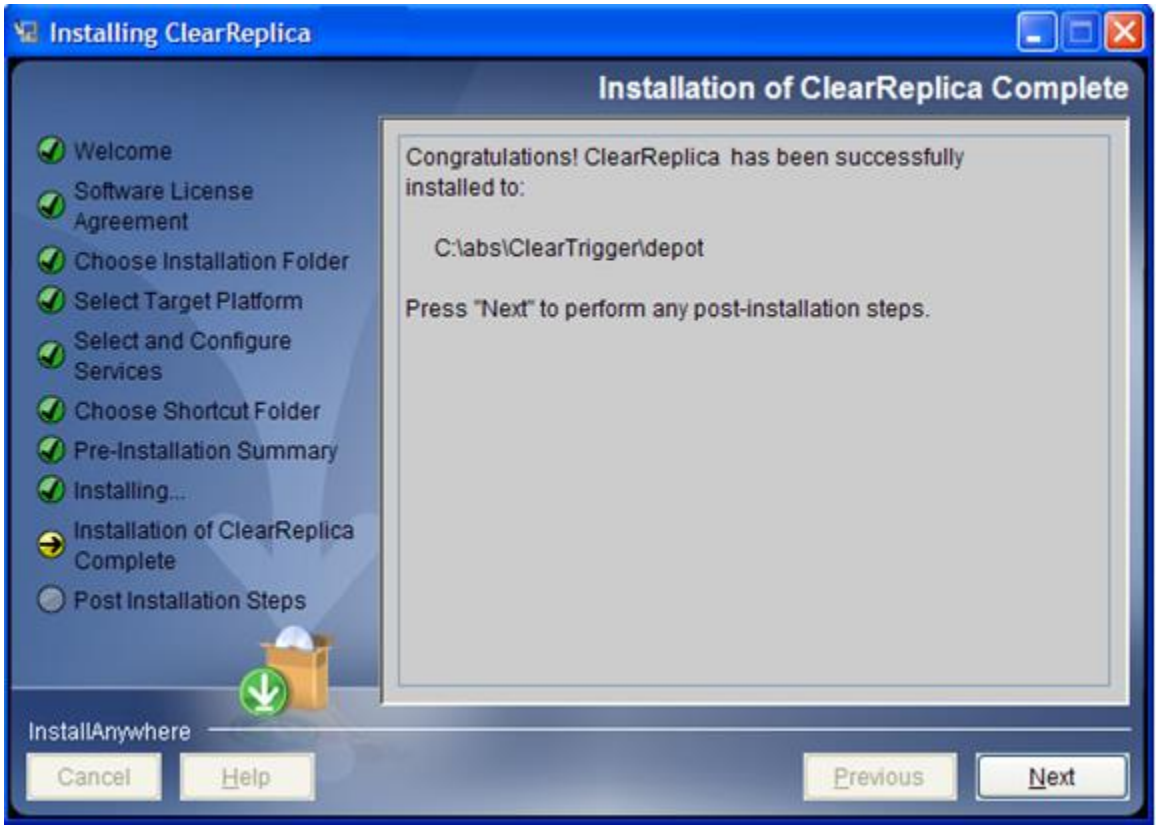
If you select "Next" on the previous panel, the summary panel below is displayed. Select "Next" to continue the install.



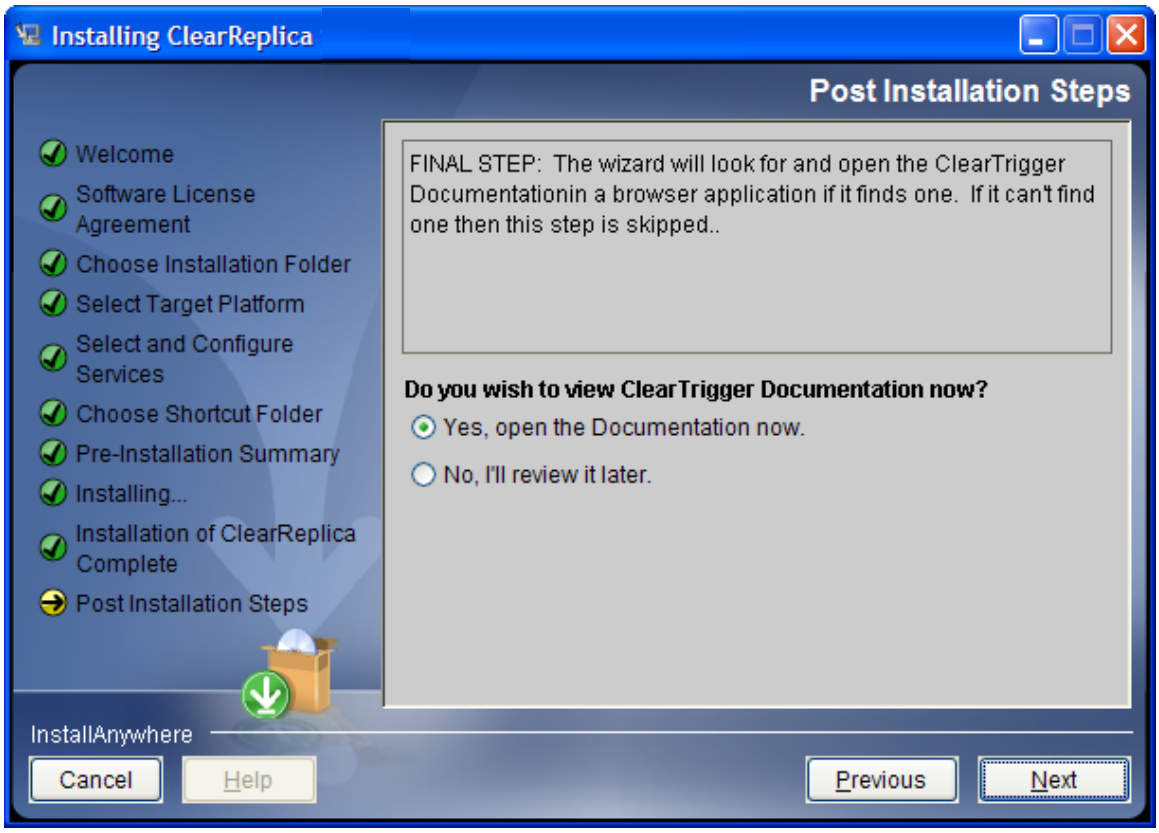
A progress panel similar to the one below will be displayed while ClearReplica is being installed. On occasion, a few other panels may appear where no user input is required.



When all files are copied and modified a panel similar to the one below is displayed. Depending on what you selected to install the panel may have more or less information displayed.

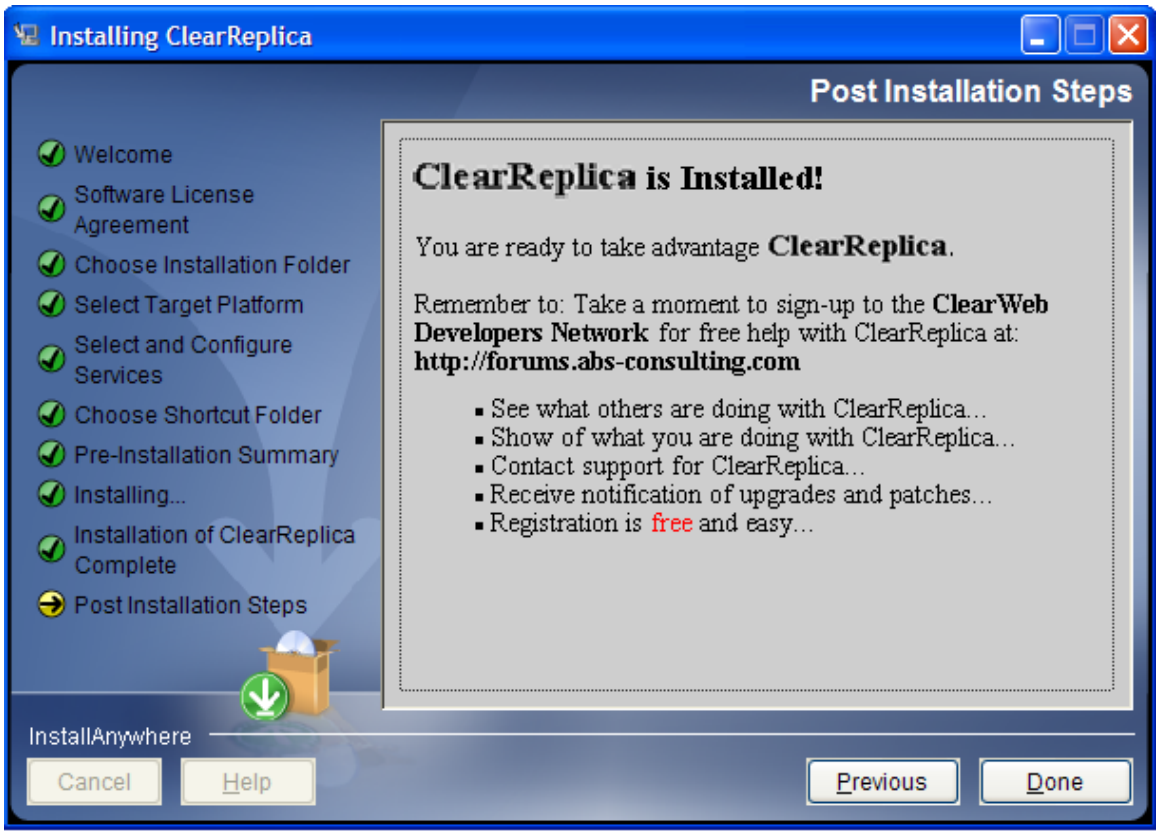


After installation you are given the option to review the ClearReplica Administration. For Windows installations, the pdf file is opened directly, for Unix installation a browser is searched for and the pdf is opened in any found browser. If you installed on a Windows Platform there is also a shortcut to the documentation in your Windows Start Menu:
(**Start > Programs > ClearReplica > ClearReplica Documentation**).



Select “Done” to end the installation program. After selecting “Finish” you should perform any needed post-installation steps outlined in the section entitled “**Post Installation Steps**”.

All software is now located to the server, proceed to the section entitled “**Post Installation Steps**” now.

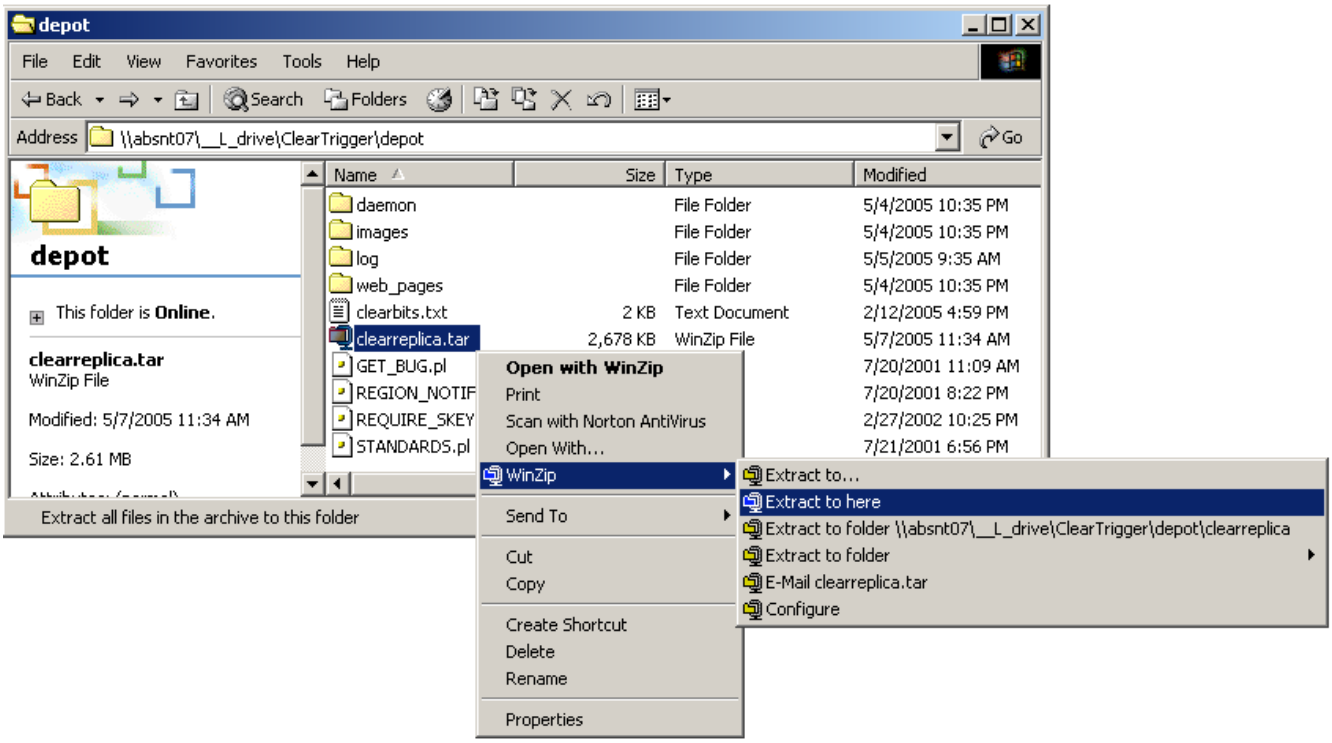


Manual ClearReplica Install

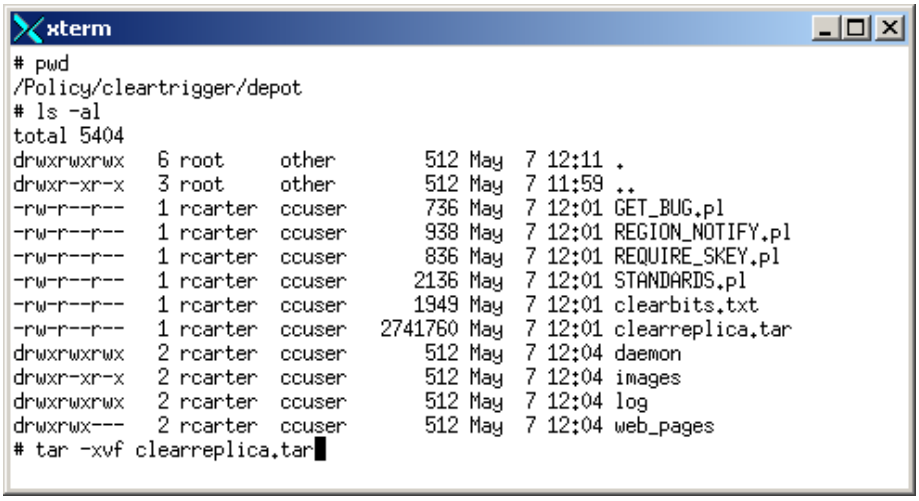
ClearReplica may be installed locally or in a central network location accessible by ClearCase clients and servers. This installation procedure can be used for each of the supported platforms. You must download the ClearReplica distribution tar file (**clearreplica.tar**) from the ABS Download Center (http://www.abs-consulting.com). Once you have completed the download, proceed as follows:

1) **Copy clearreplica.tar** to the associated ClearTrigger Depot. (i.e. if your ClearTrigger depot is **/policy/depot** then copy **clearreplica.tar** to that directory.

2) **If installing from a windows platform** navigate to the ClearTrigger Depot and extract the required directory structure using WinZip like depicted below:



3) **If installing from a UNIX platform** navigate to the ClearTrigger Depot and extract the required directory by executing the appropriate tar like depicted below:



4) If you will not run the ClearReplica "shipper" process form this location skip this step. Otherwise, change the values in the {depot}/m_bay/config/shipper.conf file to values appropriate for your organization.

Refer to the section entitled "**Setting appropriate shipper.conf values**" for more help on these values.

5) If you will not run the ClearReplica "receiver" process form this location skip this step. Otherwise, change the values in the {depot}/m_bay/config/receiver.conf file to values appropriate for your organization.

Refer to the section entitled "**Setting appropriate receiver.conf values**" for more help on these values.

6) All software is now located to the server, proceed to the section entitled "**Post Installation Steps**" now.

Post-installation steps

Once the ClearReplica executables and configuration files are in place the protection of certain files and directories as well as some other post-installation steps should be considered. These post-installation steps should not be ignored or skipped, please read these sections carefully.

ClearReplica Roles

Once the ClearReplica executables and configuration files are in place the protection of certain files and directories should be considered. How they are protected depends on the roles you have defined in your organization. The are no "user roles" screens, dialogs or forms; "roles" are just used in the documentation to help explain the post-installation steps so you make sure your ClearReplica installation is safe from accidental or malicious unauthorized changes.

There are three (3) roles that are important to ClearReplica; users might be members of more than one role. The roles are listed below:

- **site_installer** : The person or persons (designated by userid) that installed or can install ClearReplica. Members of this role do not require any special OS privileges and they are not required to have "root" or "administrator" privileges. They only need write access to the associated ClearTrigger Depot directory. Therefore the persons that can install ClearReplica are determined by who can create a new directory in the top level of the depot as per the normal file system permissions. If you have gotten to this portion of the Installation Guide then you most likely are the provider of the functionality of this role.

- **replica_manager** : The person or persons (designated by userid) that can make new ClearReplica **replication_entries** and will perform most ClearReplica day-to-day administration. Replication_entries define what VOB data is replicated and to where. Replica_managers require write access to the directory "{depot}/m_bay/config" and all contained files and sub-directories.

- **region_replication_id**: This role should only have one member. For any ClearReplica region there should be userids that can run ClearReplica processes. When running a ClearReplica processes the current userid and group of that process should have read/write permissions in all VOBs in the ClearReplica region.

  It makes good sense to create a group that can read/write to all VOBs in the ClearReplica region (if one does not already exists) and then add the root user, if UNIX, or the selected Windows user as the only member of that group. If you already have a consistent *vob_owner_ID* for all VOBs then that userid would suffice.

(post install step #1) Protecting Directories and files

After performing the initial installation the there should be a directory named "**m_bay**" in the top level of your associated ClearTrigger depot directory. The "m_bay" directory should have six (6) directories in it. **Protect the contents of the directories as outlined below**:

- **_ship_out**: Everyone should have write access to this directory. For Unix the permissions 777 are recommended while on Windows "everyone" can have "Full Control" access rights.

- **_hold_out**: Everyone should have write access to this directory. For Unix the permissions 777 are recommended while on Windows "everyone" can have "Full Control" access rights.

- **_triggers**: Only the **region_replication_id** needs read/write permission to this directory as only the ClearReplica "replication trigger scripts" are contained there. It is **highly recommended** that only the **region_replication_id** have ***write*** permission to this directory to ensure proper ClearReplica functionality.

- **bin**: Members of the role **replica_manager** should have read and execute permissions in this directory and it's contents recursively. For Unix the permissions 500 are recommended if there is a single user in the role while 550 is recommended if there are multiple members and they have a matching group. For Windows servers all userids that perform **replica_manager** functions should have "Read & Execute" access rights.

- **config**: Members of the role **replica_manager** should have read, write and execute access and execute permissions in this directory and its contents recursively. For Unix the permissions 700 are recommended if there is a single user in the role while 770 is recommended if there are multiple members and they have a matching group. For Windows servers all userids that perform **replica_manager** functions should have "Full Control" access rights.

- **epocs**: Only the **region_replication_id** needs read/write permission to this directory as only the ClearReplica "receiver" process writes to this directory. It is **highly recommended** that only the **region_replication_id** have ***write*** permission to this directory to ensure proper ClearReplica functionality.

- **logs**: Only the **region_replication_id** needs read/write permission to this directory as only ClearReplica processes write to this directory. It is recommended that members of the **replica_manager** role have read access**.** It is **highly recommended** that only the **region_replication_id** have ***write*** permission to this directory to ensure proper ClearReplica functionality.

(post install step #2) Making ClearReplica Dedicated Views

Each ClearReplica service executable (clearreplica_shipper or clearreplica_receiver) requires it's own dedicated view to perform its actions. Each respective view must be created prior to starting the service, but only of the service is to be used for the ClearReplica region. . Each view should be created as the **region_replication_id.** Details for each are described in their own section that follows.

Making Dedicated ClearReplica "shipper" views

If you are planning to run the ClearReplica "shipper" service (clearreplica_shipper) then you are required to make a "shipper" view. The view should be created by the **region_replication_id.** The view can be set to the **default config. spec.** as the **clearreplica_shipper** modifies it as it needs to based on information defined when it processes a **replica_definition**.

While logged on as the **region_replication_id** perform the **cleartool mkview** command similar to the command below:

cleartool mkview –tag *shipper* –stgloc –auto

It is not required that the **view_tag** actually be "shipper", but it is used as a convention. Remember, it is a requirement for UNIX servers that the region_replication_id be the "root" user with a current group id that has read permission for all VOBs in the shipping ClearReplica region.

Making Dedicated ClearReplica "receiver" views

If you are planning to run the ClearReplica "receiver" service (clearreplica_receiver) then you are required to make a "receiver" view. The view should be created by the **region_replication_id.** The view can be set to the **default config. spec.** as the **clearreplica_receiver** modifies it as it needs to based on information sent in the ClearReplica packets it receives.

If the ClearReplica "receiver" will only receive packets from ClearReplica "shipper" servers of the same architecture (i.e. UNIX "receiver" receives from UNIX "shippers" or Windows "receiver" receives from Windows "shippers") then while logged on as the **region_replication_id** perform the **cleartool mkview** command similar to the command below:

cleartool mkview –tag *receiver* –stgloc –auto

If your selected ClearReplica "Receiver" will receive packets from a ClearReplica "shipper" of another architecture (i.e. Windows ClearReplica "Receiver" receives from a UNIX ClearReplica "shipper or a UNIX ClearReplica "Receiver" receives from a Windows ClearReplica "shipper) then you must enable interop text mode support for the receiving VOBs in the receiving ClearReplica region (**or optionally inform the administrator at the shipping site to send packets from a server of the same architecture**).

To enable interop text support for a VOB in UNIX enter a similar to the one below:

..... /USR/ATRIA/ETC/UTILS/MSDOSTEXT_MODE {PATH TO VOB_STORAGE}

To enable interop text support for a VOB in Windows enter a similar to the one below:

"\Program files\Rational\ClearCase\etc\utils\msdostext_mode" {path to vob_storage}

If you select a UNIX ClearReplica "receiver" and it will receive packets from a Windows ClearReplica "shipper" server then while logged on as the **region_replication_id** perform the **cleartool mkview** command similar to the command below:

cleartool mkview –tag *receiver* –tmode_strip_cr –stgloc –auto

If you select a Windows ClearReplica "receiver" and it will receive packets from a UNIX ClearReplica "shipper" server then while logged on as the **region_replication_id** perform the **cleartool mkview** command similar to the command below:

cleartool mkview –tag *receiver* –tmode_insert_cr –stgloc –auto

It is not required that the **view_tag** actually be "receiver", but it is used as a convention. Remember, it is a requirement for UNIX servers that the region_replication_id be the "root" user with a current group id that has read permission for all VOBs in the receiving ClearReplica region.

(post install step #3) Configuring "Shipper" and "Receiver"

If you performed an "automated" install of ClearReplica, then you can probably skip this step if you placed appropriate values in the panels when installing and this section can serve as a "sanity" check. If you performed a "manual" install, then this section is required as you still have yet to make changes to the **shipper.conf** and or **receiver.conf** files located in the **{depot}/m_bay/config** directory. The following sections outline the required setting changes in each file. There is also ample information on how to change the associated values for each file in the distributed config. files themselves.

Setting appropriate ClearReplica shipper.conf values

This section outlines the available configuration parameters for the ClearReplica "shipper" (clearreplica_shipper). The configuration parameters are located in the **shipper.conf** file which is located in the **{depot}/m_bay/config** directory. If you performed an "automated" install then these settings were initialized in the shipper.conf file already, if you performed a "manual" install then you will need to initialize these settings. There are two sections in the file "configuration settings" and "replication definitions". Only the "configuration settings" are discussed here and relevant for "installation". The "replication definitions" section is discussed in the ClearReplica Administration Guide as it most likely changed by members of the **replica_manager** role.

The configuration values of the clearreplica_shipper are read once when the "shipper" is started so changes to the values require restarting of the clearreplica_shipper to take effect.

Below is a table listing a summary of the variables followed by more details on each one.

Shipper Configuration variables	Applicable to these Architectures		Purpose
	UNIX	Windows	
view	X	X	The name of the dedicated view that the "shipper" uses to perform its work.
location_name	X	X	The name used to refer to the ClearReplica region
UTC_offset	X	X	The time zone difference between the local time at the "location" and Greenwich Mean Time
MVFS_DRIVE		X	The MVFS drive on the "Windows" machine that performs ClearReplica Shipper functions.
duration	X	X	Number of minutes, seconds or hours that the shipper waits after processing the last replication definition in the list to again start processing the available list. If the parameter "**duration_scale**" is set to "minute" or omitted then the duration parameter can range from [0...1440] (number of minutes in 1 day). If the parameter "duration_scale is set to "hour" then the duration parameter can range

			from [0…24]. If the parameter "duration_scale is set to "second" then the duration parameter can range from [0…60]. A values of '0' is always interpreted as "immediately" regardless of the duration_scale parameter value.
duration_scale (optional)	X	X	From the values ["second", "minute", "hour"] with a default of "minute" if omitted. This parameter determines what the parameter "duration" refers to in its count.
transport_program	X	X	Program used the "shipper" uses to ship packets to "receivers".
shipper_id	X	X	Names the **userid** that is allowed to run the shipper for this associated depot. This userid should have read access to all VOBs that it will replicate/ship and read access to the associated shipper view.
pre_ship_trigger	X	X	Optional script or executable that is called **immediately before** any requested shipping packet is created. If the script exits with a zero return code then the packet is created and immediately shipped (unless it is destined to the **_hold_out** directory). If the script exits with a non-zero (failed) status then the packet is not built and the appropriate ***error*** message is written to the ClearReplica **shipper logs**. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.
post_ship_trigger	X	X	Optional script or executable that is called **immediately after** any requested shipping packet is created and shipped (or created and placed in the **_hold_out** directory), even if the packet did not process successfully (providing an opportunity to clean up any data changes made in the **pre_ship_trigger_script**). If the script exits with a non-zero (failed) status then the appropriate ***warning*** message is written to the ClearReplica **shipper logs**. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.
encryption (optional)	X	X	From the values ["standard", "peer_to_peer"] with a default of "standard" if omitted. This parameter determines if **"Standard ClearReplica Encryption"** is used or if an additional **Peer_To_Peer ClearReplica Encryption** is used. If this value is set to "peer_to_peer" then the ClearReplica shipper process uses the encryption key stored in the shippers associated **encryption key file**. The encryption key file must reside in the ***m_bay/config/keys*** directory in the associated ClearTrigger depot.
slink_scale (optional)	X	X	From the values ["0"... "3"] with a default of "1" if omitted. This optional parameter determines the amount of memory allocated to **symbolic link** processing when packets are created. Only add/modify if processing a VOB with an exceptional number of symbolic links (more than 10,000 symbolic links) and under the direction of ABS.
postp_scale (optional)	X	X	From the values ["1"... "3"] with a default of "1" if omitted. This optional parameter determines the amount of memory allocated to **rmelem** and **mklabel** processing link processing when packets are created. Only add/modify if suggested by ClearReplica shipper logs and under the direction of ABS.
startup_trigger (optional)	X	X	Optional script or executable that is called **immediately after** the successful startup of a ClearReplica shipper process. If the script exits with a zero return code then the shipper process continues. If the script exits with a non-zero (failed) status then the shipper startup is considered denied by that script and the appropriate ***error*** message is written to the

			ClearReplica **shipper_logs**. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.
shutdown_trigger (optional)	X	X	Optional script or executable that is called **immediately after** the successful shutdown of a ClearReplica shipper process. If called, an appropriate ***error*** or ***success*** message is written to the ClearReplica **shipper_logs** indicating the script's return code. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.

More detailed information on these and additional shipper configuration parameters and their syntax for the **clearreplica_shipper** are included in the ClearReplica Administration Manual (section entitled **shipper.conf**).

Setting appropriate ClearReplica receiver.conf. values

This section outlines the available configuration parameters for the ClearReplica "receiver" (clearreplica_receiver). The configuration parameters are located in the **receiver.conf** file which is located in the **{depot}/m_bay/config** directory. If you performed an "automated" install then these settings were initialized in the receiver.conf file already, if you performed a "manual" install then you will need to initialize these settings. There are two sections in the file "configuration settings" and "receiver directory definitions". Only the "configuration settings" are discussed here and relevant for "installation". The "receiver directory definitions" section is discussed in the ClearReplica Administration Guide as it most likely changed by members of the **replica_manager** role.

The configuration values of the clearreplica_receiver are read once when the "receiver" is started so changes to the values require restarting of the clearreplica_ receiver to take effect.

Below is a table listing a summary of the variables followed by more details on each one.

Receiver Configuration variables	Applicable to these Architectures UNIX	Windows	Purpose
view	X	X	The name of the dedicated view that the "receiver" uses to perform its work.
location_name	X	X	The name used to refer to the ClearReplica region
UTC_offset	X	X	The time zone difference between the local time at the "location" and Greenwich Mean Time
MVFS_DRIVE		X	The MVFS drive on the "Windows" machine that performs ClearReplica Shipper functions.
receiver_id	X	X	Optional script or executable that is called **immediately**

			before any received packet is processed. If the script exits with a zero return code then the packet is processed. If the script exits with a non-zero (failed) status then the packet is not processed and the appropriate ***error*** message is written to the ClearReplica **receiver logs**. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.
pre_receiver_trigger	X	X	Optional script or executable that is called **immediately before** any received packet is processed. If the script exits with a zero return code then the packet is processed. If the script exits with a non-zero (failed) status then the packet is not processed and the appropriate ***error*** message is written to the ClearReplica **receiver logs**. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.
post_receiver_trigger	X	X	Optional script or executable that is called **immediately after** any received packet is processed, even if the processed packet did not complete (providing an opportunity to clean up any data changes made in the **pre_receive_trigger_script**). If the script exits with a non-zero (failed) status then the appropriate ***warning*** message is written to the ClearReplica **receiver logs**. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.
new_dir_personality	X	X	Optional parameter with the value of either **"main"** or **"branch"** that determines if newly created directory version are created on the /main branch ("main") or as per the received Config. Spec. sent by the shipping site ("branch"). **The default value is "main" if none is provided.**
encryption (optional)	X	X	From the values ["standard", "peer_to_peer"] with a default of "standard" if omitted. This parameter determines if**"Standard ClearReplica Encryption"** is used or if an additional **Peer_To_Peer ClearReplica Encryption** is used. If this value is set to "peer_to_peer" then the ClearReplica shipper process uses the encryption key stored in the shippers associated **encryption key file**. The encryption key file must reside in the ***m_bay/config/keys*** directory in the associated ClearTrigger depot.
startup_trigger (optional)	X	X	Optional script or executable that is called **immediately after** the successful startup of a ClearReplica receiver process. If the script exits with a zero return code then the receiver process continues. If the script exits with a non-zero (failed) status then the receiver startup is considered denied by that script and the appropriate ***error*** message is written to the ClearReplica **receiver_logs**. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.

shutdown_trigger (optional)	X	X	Optional script or executable that is called **immediately after** the successful shutdown of a ClearReplica receiver process. If called, an appropriate ***error*** or ***success*** message is written to the ClearReplica **receiver_logs** indicating the script's return code. This script or program must reside in the ***m_bay/_triggers*** directory in the associated ClearTrigger depot.
ignore_received_slinks	X	X	Optional parameter with the value of either **"yes"** or **"no"** that determines if newly created symbolic links are created if included in received packets. **The default value is "no" if none is provided.**
ignore_received_label_data (optional)			Optional parameter with the value of either **"yes"** or **"no"** that determines if newly received label data is replicated to ignored by the receiver if included in received packets. **The default value is "no" if none is provided.**
ignore_received_branch_data (optional) **(*added in 12.0)**			Optional parameter with the value of either **"yes"** or **"no"** that determines if newly received branch data is replicated to ignored by the receiver if included in received packets. **The default value is "no" if none is provided.**
ignore_received_attribute_data (optional) **(*added in 12.0)**			Optional parameter with the value of either **"yes"** or **"no"** that determines if newly received attribute data is replicated to ignored by the receiver if included in received packets. **The default value is "no" if none is provided.**
suppress_locked_label_checking (optional)			Optional parameter with the value of either **"yes"** or **"no"** that determines if newly locked label warning are printed to the receiver logs upon packet receipt for packets containing labels that are locked in the receiver. **The default value is "no" if none is provided.**
suppress_locked_branch_checking (optional) **(*added in 12.0)**			Optional parameter with the value of either **"yes"** or **"no"** that determines if newly locked branch warning are printed to the receiver logs upon packet receipt for packets containing branches that are locked in the receiver. **The default value is "no" if none is provided.**
suppress_locked_attribute_checking (optional) **(*added in 12.0)**			Optional parameter with the value of either **"yes"** or **"no"** that determines if newly locked atribute warning are printed to the receiver logs upon packet receipt for packets containing attribute that are locked in the receiver. **The default value is "no" if none is provided.**

More detailed information on these and addional receiver configuration parameters and their syntax for the **clearreplica_receiver** are included in the ClearReplica Administration Manual (section entitled **receiver.conf**):

Starting/stopping "Shipper" or "Receiver" Services

The ClearReplica "shipper" (clearreplica_shipper) and ClearReplica "receiver" (clearreplica_receiver) perform ClearReplica replication services. Your site or "location" may only require one service if it is the "receiving" site in a one-way shipping (i.e. you are the "disaster recover" or backup site and no development is performed on the receiving VOBs at you location) or your site is the "shipping site to such a location. Organizations (locations) that require two-way replication will require that both services be started. Collaborate with the members of the **replica_manager** role to determine which processes need to be started. For more information on starting and stopping these processes refer to the ClearReplica Administration Manual (sections entitled: **Starting/Stopping the ClearReplica "Shipper"** and **Starting/Stopping the ClearReplica "Receiver"**).

