



vReplicator™



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Document Revision History

Document Version Number	Issue Date	Description of Change
2.5a	04/09/08	Initial document
2.5b	05/23/08	<u>Chapter 1</u> <ul style="list-style-type: none">In the Snapshots and Hybrid Replication sections of vReplicator Overview, added a warning against running a differential backup of a VM that is undergoing hybrid replication. <u>Chapter 2</u> <ul style="list-style-type: none">Updated list of OSs in the Location Requirements section.In the Interoperability Requirements section, updated lists and added support policy statement.Added these sections: Installation Support, Guest VSS Support, and Guest OS for Replication Support.
2.5c	06/12/08	<u>Chapter 1</u> <ul style="list-style-type: none">In the vReplicator Overview section, included a description of the encryption scheme used in the software. <u>Chapter 2</u> <ul style="list-style-type: none">Updated the upgrade to new version information in the Installing vReplicator section.
2.5d	07/18/08	<u>Chapter 1</u> <ul style="list-style-type: none">Updated the vReplicator Licensing section. <u>Chapter 2</u> <ul style="list-style-type: none">Updated VSS Guest Support table: Windows 2000 SP4/SP5 for 32-bit OSs is no longer supported. <u>Chapter 4</u> <ul style="list-style-type: none">Updated the Status Bar section.

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1 Introduction

vReplicator™ software is a powerful real-time replication solution for the VMware® ESX Server environment. vReplicator is designed to perform replication specifically for virtual machines (VMs.)

In this manual, you will learn how to install and configure vReplicator. You will also learn how to use these components:

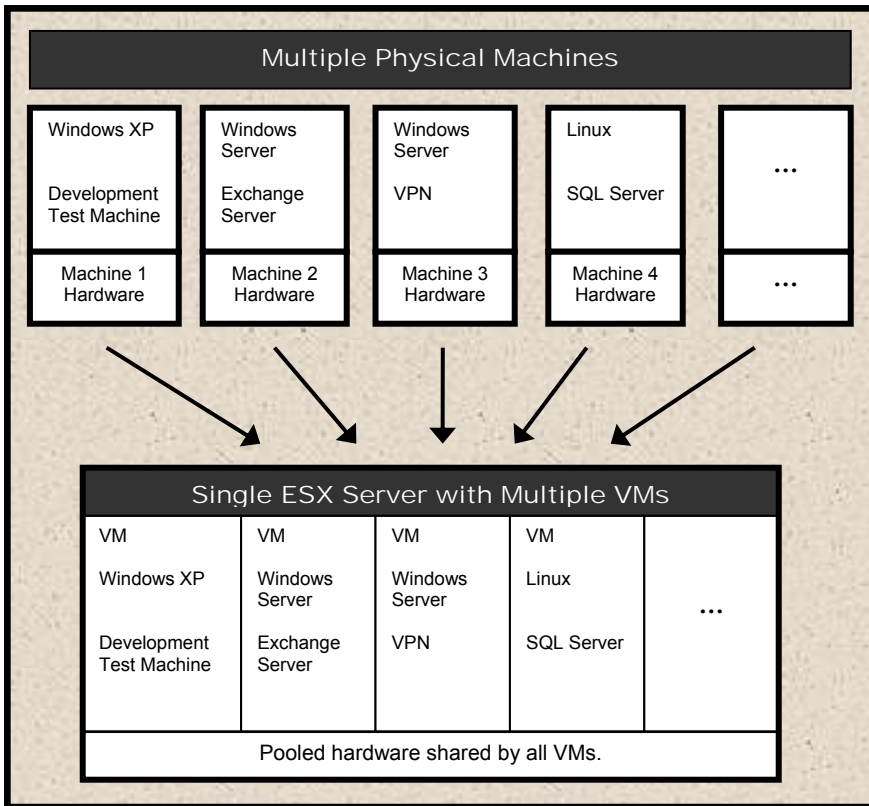
- Notification
- Alerts
- Hybrid and differential replication
- Reports

First, some background on the context in which vReplicator was developed.

Virtualization and VMware Overview

As companies and industries grow, their technology needs change. These changes are often implemented within complex systems running business-critical applications. Usually there is an increased demand for shared hardware and software resources. To manage this demand, many companies establish virtual environments. Doing so can increase an organization's agility and efficiency while lowering its costs.

Most companies have a number of specialized physical servers and workstations that are underutilized. Virtualizing such an environment increases and balances utilization by consolidating the physical machines into a single physical host that runs multiple VMs. The VMs share the resources—processor, memory, network cards, and disks—of one physical host. The work that the physical machines did previously continues, but with greater efficiency. The host runs a layer of virtualization software that manages the environment. Each VM's operating system (OS)—usually Windows or Linux—functions as if the hardware were physical. Guest software can see only x processor, y memory, and so forth.



A virtual infrastructure affords maximum flexibility, allowing you to treat VMs as if they were physical hardware and software. VMs can be moved easily between hosts. They can be run in isolation or in groups. Their workloads can be reconfigured as demand requires. This flexibility is supported by management tools. VMware VirtualCenter (VC) and ESX Server are, respectively, the management server and software components that lend order to flexibility in a virtual environment.

As a management server, VC orchestrates the configuring and provisioning of all VMs. VC's database stores all of the shared information between the physical hosts and the VMs. Without compromising security, VC makes it possible to connect to a host remotely from a standard Windows computer.

As its own host OS, ESX Server allows you to establish VMs, configure and manage their shared resources, and make ongoing adjustments to increase performance. Each VM is configured with its own virtual hardware—for example, central processing unit (CPU), random access memory (RAM), and universal serial bus (USB) ports. The work of the VM's physical counterpart is run in its native OS. Because VMs require neither redundant hardware nor physical space, virtualization can mean significant cost savings.

The transition from physical to virtual is seamless. To achieve optimum utilization in a virtualized environment, it must be maintained well. To do this, data and other assets must be monitored, protected, and preserved.

vReplicator Overview

Reliable business continuity and disaster recovery (DR) strategies deliver comprehensive and consistent results. Replication plays a key role in this process. If done well, replication can restore systems securely while enhancing performance and minimizing interruption.

VMware Infrastructure 3 (VI3) provides a solid platform for replication. vReplicator 2.5 was designed to be the definitive replication solution for VI3. vReplicator captures the complete VM image—OS, configuration settings, applications, and data. vReplicator's Windows-based interface offers easy access and navigation. All potential source and destination machines display in a tree structure.

There are two replication methods and schedules from which to choose. Once a job is configured, you can run it at any time—even off-schedule. You can run jobs between hosts, VMs, or dissimilar hardware platforms. With the help of vzBoost, vReplicator does its work quickly—while the source machine is running—without compromising system resources. vReplicator monitors VM and host performance patterns. You can use this information to improve replication job scheduling.

Snapshots

vReplicator uses VMware snapshots during replications to ensure that the entire VM image is captured. Snapshots keep each replication job current by allowing you to revert to a previous point in time, merging that data with the current data.

vReplicator does not support third party tools that use snapshots. vRanger Pro is an exception because it shares a file-locking mechanism with vReplicator that prevents failures and data loss, even when the applications are running concurrently against the same VM. When vReplicator attempts a replication, it needs access to the source VM's disk files. For vRanger Pro to create a backup, it requires similar access. If a replication job is in process when vRanger Pro attempts a backup, vRanger Pro will pause until the replication pass has completed. Alternately, if a backup job is in process when vReplicator attempts a replication, the replication pass will pause to allow the backup to complete.

Warning: During hybrid replication, a snapshot remains open continuously. This can compromise vRanger Pro's ability to complete differential backups of a VM being replicated. When you initiate a hybrid replication, you should not use vRanger Pro to perform a differential backup of that VM. In this case, it is best to complete a full backup of the machine.

VC

vReplicator can connect with the source and destination machines directly or through VC. There are several advantages to integrating VC with vReplicator. VC serves as a host management interface, organizing data stores, hosts, VMs, and other objects in a tree structure. VC makes it possible for vReplicator to monitor the movement of VMs

between hosts. Even after a vMotion event occurs, replication activities can continue unabated.

VSS

The Microsoft® Volume Shadow Copy Service (MS VSS) driver in vReplicator works in conjunction with Vizioncore's VSS agent to ensure reliable remote API call communication. By alternately freezing and thawing application writes, MS VSS and Vizioncore VSS provide consistent results during each replication process. VSS enables quiescing—or pausing—of application writes when database servers such as SQL and Oracle are being replicated.

vzBoost

In vReplicator, vzBoost is an optional driver that improves write speeds to the Virtual Machine File System (VMFS). vzBoost manages Service Console traffic; it has no input/output (I/O) impact on running VMs. The driver is enabled through Tools→Preferences→ESX Server and is installed on the destination ESX host. vReplicator activates the driver when a write to VMFS is initialized. The driver remains activated only for the duration of the write. As soon as the data transfer completes, the driver becomes inactive and no longer taxes system resources.

Differential Replication

In differential replication, the source Virtual Machine Disk Format (VMDK) is scanned. A data map is created during the first replication pass. When the first snapshot is taken, disk writes are suspended temporarily. The snapshot remains open. An empty virtual disk—called the delta file—is added. As data is replicated, this file grows. These changes are merged back into the VMDK and the snapshot is closed. During the second replication pass, a snapshot is opened. On the vReplicator box, the source VM's current data is compared to the changed data stored in the data map. These changes are replicated, block by block, and committed to the destination machine. Then, the snapshot is closed and the VMDK is opened. The entire source VM image is replicated to the destination machine.

Hybrid Replication

Using the hybrid approach, replication is done as a function of change over time rather than change to data. Snapshots can be taken at shorter intervals with no loss of data. There is no need to scan during each replication pass. The differentials engine resynchronizes the source and destination VMs selectively. Therefore, there is no need to replicate the entire source image again, just to capture the data that changed between snapshots.

During hybrid replication, two snapshots are created. One snapshot remains open continuously. While the second snapshot is usually not visible to the user, it plays an important role in replication. As time passes, the second snapshot fills with data.

Ultimately, this data is copied to the destination VM and then merged into the first snapshot.

This method allows for a very fast process, in part because no scanning is required. Nonetheless, the continuously open snapshot can decrease I/O temporarily. Because this method replicates as a function of change over time, snapshots can grow rather large and cumbersome. For this reason, it is important to confirm sufficient free disk space in advance of initiating a hybrid replication.

Warning: During hybrid replication, a snapshot remains open continuously. This can compromise vRanger Pro's ability to complete differential backups of a VM being replicated. When you initiate a hybrid replication, you should not use vRanger Pro to perform a differential backup of that VM. In this case, it is best to complete a full backup of the machine.

Replication to Multiple Destinations

vReplicator 2.5 offers replication from a single source to multiple destinations. Having this additional flexibility enhances your ability to recover from a disaster. You can schedule two jobs to execute in the same timeframe from one source VM to more than one destination. The first job that you create will execute as scheduled and the second job will be queued to run when the first job completes. Replication to multiple destinations can be done for either replication type—hybrid or differential.

Skipping VMDKs

Using vReplicator's Job Wizard, you can specify which hard disks to replicate from a single source datastore. One benefit of excluding disks that do not need to be replicated is that in doing so you conserve resources—from time and effort to disk space and bandwidth.

Performance Monitoring

As you try to establish a replication schedule that does not compromise system performance, monitoring information becomes vital. To help you assess the impact of replication jobs on your environment, vReplicator provides real-time performance statistics that indicate the load on each host. These statistics— Service Console CPU, memory, disk, and network usage—display in the Replication Management pane.

Encryption

vReplicator 2.5 uses Triple Data Encryption Standard (Triple DES) cryptology to provide password and data protection functionality. All configuration settings such as User Name, Root, and SMTP are encrypted automatically and stored securely in a disk file.

Using this Manual

Terms and Acronyms






These terms and acronyms are used in this manual.

Term or Acronym	Definition
API	Application Programming Interface
CPU	Central Processing Unit
delta file	An empty virtual disk file that is added during a replication pass. As data is replicated, this file grows.
DNS	Domain Name System
DR	Disaster Recovery
FQDN	Fully Qualified Domain Name
GB	Gigabyte
Guest	A VM that runs on an ESX Server.
Host	A physical ESX Server that runs VMs.
Hot replication	A replication that is performed while the source VM is running.
I/O	Input/Output
IP address	Internet Protocol address
LUN	Logical Unit Number
MB	Megabyte
Mb	Megabit
MMC	Microsoft Management Console
MS VSS	Microsoft Volume Shadow Copy Service works with Vizioncore VSS to make remote API call communication possible. Works to freeze and thaw application writes during replication.
NIC	Network Interface Card
OS	Operating System
PDF	Portable Document Format
Quiescing	Pauses a running process. Disables the VMware Tools Sync Driver when replicating database servers such as SQL, Exchange, Active Directory, Oracle, or any database that uses a service to write.

Term or Acronym	Definition
RAM	Random Access Memory
SA	System Administrator
SAN	Storage Area Network
SCSI	Small Computer System Interface
SMTP	Simple Mail Transfer Protocol
SQL server	A sequel server
SQL database	Structured Query Language; an SQL database.
SSH	Secure Shell Access; a network protocol used to exchange data between CPUs across a secure channel.
Su	switch user
Triple DES	Triple Data Encryption Standard
USB	Universal Serial Bus
vReplicator.msi	Installer file for vReplicator.
VC	VMware VirtualCenter; a management server within a virtualized environment
VCB	VMware Consolidated Backup
Vizioncore VSS	An agent that works with MS VSS to make remote API call communication possible in vReplicator.
vzBoost	An optional driver installed on the destination ESX host; improves write speeds to the VMFS.
VI3	VMware Infrastructure 3 (including ESX Server v3.x)
VM	Virtual Machine
VMDK	Virtual Machine Disk Format; a disk files that stores a VM's hard drive contents.
VMFS	Virtual Machine File System; VMware's cluster file system, which stores VM disk images.
VPN	Virtual Private Network
XML	Extensible Markup Language

Icons and Buttons

Within the vReplicator interface, there are several icons and buttons that display repeatedly. They are described below.

	Clicking this link displays a window containing additional information about the adjacent field.
	A closed green checkmark icon displays to the right of a field to confirm that it has been populated with a valid value.
	A closed red X icon displays to the right of a field to indicate that it contains an invalid value.
	An open green checkmark icon displays on the Add VirtualCenter and Add Host dialogs to indicate progress in IP address and/or API connection resolution.
	An open red X icon displays on the Add VirtualCenter and Add Host dialogs to indicate that IP address and/or API connection resolution could not be completed. To the right of the icon, a message displays indicating why the process failed.

vReplicator Licensing

In vReplicator, licensing is job-based rather than CPU-based. Each vReplicator license allows for one replication job from one source to one target. For each job that is scheduled, you will need a license. For example, if you replicate one VM to two remote sites, you will need two licenses if one job is in process when you add the second job. If, instead, the first job completes before you add the second job, the first license will be available to apply to the second job. Licensing applies only to source VMs. Target VMs do not require licensing.

If you do not have a permanent license, a trial license will be generated automatically for you. Each trial license allows for four replication jobs; the license expires after 30 days.

Technical/Customer Support

Contacting Dell

Note: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit <http://support.dell.com>.
2. Verify your country or region in the **Choose A Country/Region** drop-down menu at the bottom of the page.
3. Click **Contact Us** on the left side of the page.**Note:** Toll-free numbers are for use within the country for which they are listed.
4. Select the appropriate service or support link based on your need.
5. Choose the method of contacting Dell that is convenient for you.

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Aomen	Technical Support Dell™ Dimension™, Dell Inspirion™, Dell Optiplex™, Dell Lattitude™, and Dell Precision™ Servers and Storage	0800-105 0800-105
Argentina (Buenos Aires) International Access Code: 00 Country Code: 54 City Code: 11	Web Address E-Mail Address for Desktop and Portable Computers E-Mail Address for Servers and EMC® Storage Products Customer Service Technical Support Technical Support Services Sales	www.dell.com.ar la-techsupport@dell.com la_enterprise@dell.com toll-free: 0-800-444-0730 toll-free: 0-800-444-0733 toll-free: 0-800-444-0724 0-800-444-3355
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Austria (Vienna)	Web Address	Support.euro.dell.com

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		Fax (calls from outside of France)	04 99 75 40 01
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International Access		Technical Support	069 9792-7200
Code: 00		Home/Small Business Customer Service	0180-5-224400
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International Access	Technical Support	00800-44 14 95 18
Code: 00	Gold Service Technical Support	00800-44 14 00 83
Country Code: 49	Switchboard	2108129810
	Gold Service Switchboard	2108129811
	Sales	2108129800
	Fax	2108129812
Grenada	Web Address	www.dell.com/gd
	E-Mail Address	la-techsuppo@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-866-540-3355
Guatemala	Web Address	www.dell.com/gt
	E-Mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	1-800-999-0136
Guyana	E-Mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-877-270-4609
Hong Kong	Web Address	support.ap.dell.com
International Access	Technical Support E-mail Address	support.dell.com.cn/email
Code: 001	Technical Support - Dimension and Inspiron	00852-2969 3188
Country Code: 852	Technical Support - OptiPlex, Latitude, and Dell Precision	00852-2969 3191
	Technical Support - Servers and Storage	00852-2969 3196
	Technical Support - Projectors, PDAs, Switches, Routers, etc .	00852-3416 0906
	Customer Service	00852-3416 0910
	Large Corporate Accounts	00852-3416 0907
	Global Customer Programs	00852-3416 0908
	Medium Business Division	00852-3416 0912
	Home and Small Business Division	00852-2969 3105
India	Dell Support Website	support.ap.dell.com
	Portable and Desktop Support	
	Desktop Support E-mail Address	india_support_desktop@dell.com
	Portable Support E-mail Address	india_support_notebook@dell.com
	Phone Numbers	080-25068032 or 080-25068034 or your city STD code + 60003355 or toll-free: 1-800-425-8045
	Server Support	
	E-mail Address	india_support_Server@dell.com
	Phone Numbers	080-25068032 or 080-25068034 or your city STD code + 60003355 or

	Customer Service	toll-free: 1-800-425-8045
	Home and Small Business	
	Large Corporate Accounts	eec_ap@dell.com 080-25068033 or your city STD code + 60003355 or toll-free: 1-800-425-9045
	Sales	
	Large Corporate Accounts	
	Home and Small Business	
		India_care_HSB@dell.com toll-free : 1800-4254051
		India_care_REL@dell.com toll free : 1800-4252067
		1600 33 8044 1600 33 8046
Ireland (Cherrywood)	Web Address	Support.euro.dell.com
International Access Code: 00	Technical Support	
Country Code: 353	E-mail Address	dell_direct_support@dell.com
City Code: 1	Business computers	om
	Home computers	1850 543 543
	At Home Support	1850 543 543
	Sales	1850 200 889
	Home	
	Small Business	1850 333 200
	Medium Business	1850 664 656
	Large Business	1850 200 646
	E-mail Address	1850 200 646
	Customer Service	
	Home and Small Business	Dell_IRL_Outlet@dell.com
	Business (greater than 200 employees)	
	General	01 204 4014
	Fax/Sales fax	1850 200 982
	Switchboard	
	U.K. Customer Service (dealing with U.K. only)	01 204 0103
	Corporate Customer Service (dial within U.K. only)	01 204 4444
	U.K. Sales (dial within U.K. only)	0870 906 0010
		0870 907 4499
		0870 907 4000
Italy (Milan)	Web Address	Support.euro.dell.com
International Access Code: 00	Home and Small Business	
Country Code: 39	Technical Support	02 577 826 90
City Code: 02	Customer Service	02 696 821 14
	Fax	02 696 821 13
	Switchboard	02 696 821 12
	Corporate	
	Technical Support	02 577 826 90
	Customer Service	02 577 825 55
	Fax	02 575 035 30
	Switchboard	02 577 821

Jamaica	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales (dial from within Jamaica only)	1-800-440-9205
Japan (Kawasaki)	Web Address	support.jp.dell.com
International Access Code: 001	Technical Support - Dimension and Inspiron	toll-free: 0120-198-26
Country Code: 81	Technical Support outside of Japan - Dimension and Inspiron	81-44-520-1435
City Code: 44	Technical Support - Dell Precision, OptiPlex, and Latitude	toll-free: 0120-198-433
	Technical Support outside of Japan - Dell Precision, OptiPlex, and Latitude	81-44-556-3894
	Technical Support - Dell PowerApp™, Dell PowerEdge™, Dell PowerConnect™, and Dell PowerVault™,	toll-free: 0120-198-498
	Technical Support outside of Japan - PowerApp, PowerEdge, PowerConnect, and PowerVault	81-44-556-4162
	Technical Support - Projectors, PDAs, Printers, Routers	toll-free: 0120-981-690
	Technical Support outside of Japan - Projectors, PDAs, Printers, Routers	81-44-556-3468
	Faxbox Service	044-556-3490
	24-Hour Automated Order Status Service	044-556-3801
	Customer Service	044-556-4240
	Business Sales Division - up to 400 employees	044-556-1465
	Preferred Accounts Division Sales - over 400 employees	044-556-3433
	Public Sales - government agencies, educational institutions, and medical institutions	044-556-5963
	Global Segment Japan	044-556-3469
	Individual User	044-556-1657
	Individual User Online Sales	044-556-2203
	Individual User Real Site Sales	044-556-4649
	Switchboard	044-556-4300
Korea (Seoul)	Web Address	Support.ap.dell.com
International Access Code: 001	Technical Support, Customer Service	toll-free: 080-200-3800
Country Code: 82	Technical Support - Dimension, PDA, Electronics, and Accessories	toll-free: 080-200-3801
City Code: 2	Sales	toll-free: 080-200-3600
	Fax	2194-6202
	Switchboard	2194-6000
Latin America	Customer Technical Support (Austin, Texas, U.S.A.)	512 728-4093
	Customer Service (Austin, Texas, U.S.A.)	512 728-3619
	Fax (Technical Support and Customer Service) (Austin, Texas, U.S.A.)	512 728-3883
	Sales (Austin, Texas, U.S.A.)	512 728-4397
	SalesFax (Austin, Texas, U.S.A.)	512 728-4600 or 512 728-3772
Luxemborg	Web Address	Support.euro.dell.com
International Access Code: 00	Support	3420808075
Country Code: 352	Home/Small Business Sales	+32 (0)2 713 15 96
	Corporate Sales	26 25 77 81
	Customer Service	+32 (0)2 481 91 19

	Fax	26 25 77 82
Macao	Technical Support	toll-free: 0800 105
Country Code: 83	Customer Service (Xiamen, China)	34 160 910
	Transaction Sales (Xiamen, China)	29 693 115
Malaysia (Penang)	Web Address	Support.ap.dell.com
International Access Code: 00	Technical Support - Dell Precision, OptiPlex, and Latitude	toll-free: 1800 880 193
Country Code: 60	Technical Support - Dimension, Inspiron, and Electronics and Accessories	toll-free: 1800 881 306
City Code: 4	Technical Support - PowerApp, PowerEdge, PowerConnect, and PowerVault	toll-free: 1800 881 386
	Customer Service	toll-free: 1800 881 306 (option 6)
	Transaction Sales	toll-free: 1800 888 202
	Corporate Sales	toll-free: 1800 888 213
Mexico	Web Address	www.dell.com/mx
International Access Code: 00	E-mail Address	la-techsupport@dell.com
Country Code: 52	Customer Technical Support	001-877-384-8979 or 001-877-269-3383
	Sales	50-81-8800 or 01-800-888-3355
	Customer Service	001-877-384-8979 or 001-877-269-3383
	Main	50-81-8800 or 01-800-888-3355
Montserrat	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	Toll-free: 1-866-278-6822
Netherlands Antilles	E-mail Address	la-techsupport@dell.com
Netherlands (Amsterdam)	Web Address	support.euro.dell.com
International Access Code: 00	Technical Support	020 674 45 00
Country Code: 31	Technical Support Fax	020 674 47 66
City Code: 20	Home/Small Business Customer Service	020 674 42 00
	Relational Customer Service	020 674 43 25
	Home/Small Business Sales	020 674 55 00
	Relational Sales	020 674 50 00
	Home/Small Business Sales Fax	020 674 47 50
	Relational Sales Fax	020 674 47 75
	Switchboard	020 674 47 50
	Switchboard Fax	020 674 50 00
		020 674 47 50
New Zealand	Web Address	Support.ap.dell.com
International Access Code: 00	E-mail Address	Support.ap.dell.com/contactus
Country Code: 64	Technical Support, Customer Service, Sales	0800 441 567
Nicaragua	Web Address	www.dell.com/ni
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	001-800-220-1377
Norway (Lysaker)	Web Address	Support.euro.dell.com
International Access Code: 00	Technical Support	671 16882
Country Code: 47	Relational Customer Service	671 17575
	Home/Small Business Customer Service	231 62298
	Switchboard	671 16800
	Fax Switchboard	671 16865
Panama	Web Address	www.dell.com/pa
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	

		011-800-507-1264
Peru	Web Address	www.dell.com/pe
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	0800-50-669
Poland (Warsaw)	Web Address	support.euro.dell.com
International Access Code: 011	E-mail Address	pl_support_tech@dell.com
Country Code: 48	Customer Service Phone	57 95 700
City Code: 22	Customer Service	57 95 999
	Sales	57 95 999
	Customer Service Fax	57 95 806
	Reception Desk Fax	57 95 998
	Switchboard	57 95 999
Portugal	Web Address	Support.euro.dell.com
International Access Code: 00	Technical Support	707200149
Country Code: 351	Customer Service	800 300 413
	Sales	800-300-410 or 800-300 -411 or 800-300-412 or 21-422-07-10
	Fax	21-424-01-12
Puerto Rico	Web Address	www.dell.com/pr
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	1-877-537-3355
St. Kitts and Nevis	Web Address	www.dell.com/kn
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-866-540-3355
St. Lucia	Web Address	www.dell.com/lc
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-866-464-4352
St. Vincent and the Grenadines	Web Address	www.dell.com/vc
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-866-464-4353
Singapore	NOTE: The phone numbers in this section should be called from within Singapore or Malaysia only.	
International Access Code: 005	Web Address	support.ap.dell.com
Country Code: 65	Technical Support - Dimension, Inspiron, and Electronics and Accessories	toll-free: 1 800 394 7430
	Technical Support - OptiPlex, Latitude, and Dell Precision	toll-free: 1 800 394 7488
	Technical Support - PowerApp, PowerEdge, PowerConnect, and PowerVault	toll-free: 1 800 394 7478
	Customer Service	toll-free: 1 800 394 7430 (option 6)
	Transaction Sales	toll-free: 1 800 394 7412
	Corporate Sales	toll-free: 1 800 394 7419
Slovakia (Prague)	Web Address	support.euro.dell.com
International Access Code: 00	E-mail Address	czech_dell@dell.com
Country Code: 421	Technical Support	02 5441 5727
	Customer Service	420 22537 2707
	Fax	02 5441 8328
	Tech Fax	02 5441 8328

	Switchboard (Sales)	02 5441 8328 02 5441 7585
South Africa (Johannesburg)	Web Address	support.euro.dell.com
International Access Code: 09/091	E-mail Address	dell_za_support@dell.com
Country Code: 27	Gold Queue	011 709 7713
City Code: 11	Technical Support	011 709 7710
	Customer Service	011 709 7707
	Sales	011 709 7700
Spain (Madrid)	Web Address	Support.euro.com
International Access Code: 00	Home and Small Business	
Country Code: 34	Technical Support	902 100 130
City Code: 91	Customer Service	902 118 540
	Sales	902 118 541
	Switchboard	902 118 541
	Fax	902 118 539
	Corporate	
	Technical Support	902 100 130
	Customer Service	902 115 236
	Switchboard	91 722 92 00
	Fax	91 722 95 83
Sweden (Upplands Vasby)	Web Address	support.euro.dell.com
International Access Code: 00	Technical Support	08 590 05 199
Country Code: 46	Relational Customer Service	08 590 05 642
City Code: 8	Home/Small Business Customer Service	08 587 70 527
	Employee Purchase Program (EPP) Support	020 140 14 44
	Technical Support Fax	08 590 05 594
Switzerland (Geneva)	Web Address	Support.euro.dell.com
International Access Code: 00	E-mail Address	Tech_support_central_Europe@dell.com
Country Code: 41	Technical Support - Home and Small Business	0844 811 411
City Code: 22	Technical Support - Corporate	0844 822 844
	Customer Service - Home and Small Business	0848 802 202
	Customer Service - Corporate	0848 821 721
	Fax	022 799 01 90
	Switchboard	022 799 01 01
Taiwan	Web Address	support.ap.dell.com
International Access Code: 002	E-mail Address	support.dell.com.cn/email
Country Code: 886	Technical Support - OptiPlex, Latitude, Inspiron, Dimension, and Electronics and Accessories	toll-free: 0080 186 1011
	Technical Support - Servers and Storage	toll-free: 0080 160 1256
	Customer Service	toll-free: 0080 160 1250 (option 5)
	Transaction Sales	toll-free: 0080 165 1228
	Corporate Sales	toll-free: 0080 165 1227
Thailand	Web Address	Support.ap.dell.com
International Access Code: 001	Technical Support (OptiPlex, Latitude, and Dell Precision)	toll-free: 1800 0060 07
Country Code: 66	Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault)	toll-free: 1800 0600 09
	Customer Service	toll-free: 1800 006 007 (option 7)
	Corporate Sales	toll-free: 1800 006 009
	Transaction Sales	toll-free: 1800 006 006

Trinidad/Tobago	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/tt la-techsupport@dell.com toll-free: 1-888-799-5908
Turks and Caicos Islands	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/tc la-techsupport@dell.com toll-free: 1-877-441-4735
U.K.(Bracknell) International Access Code: 00 Country Code: 44 City Code: 1344	Web Address E-mail Address Customer Service Website Sales Home and Small Business Sales Corporate/Public Sector Sales Customer Service Home and Small Business Corporate Preferred Accounts (500-5000 employees) Global Accounts Central Government Local Government & Education Health Technical Support Corporate/Preferred Accounts/PCA (1000+ employees) Other Dell Products General Home and Small Business Fax	support.euro.dell.com dell_direct_support@dell.com support.euro.dell.com/uk/en/ECare/form/home.asp 0870 907 4000 01344 860 456 0870 906 0010 01344 373 185 0870 906 0010 01344 373 186 01344 373 196 01344 373 199 01344 373 194 0870 908 0500 0870 353 0800 0870 907 4006
Uruguay	Web Address E-mail Address Technical Support, Customer Service, Sales	www.dell.com/uy la-techsupport@dell.com toll-free: 000-413-598-2521
U.S.A. (Austin, Texas) International Access Code: 011 Country Code: 1	Automated Order-Status Service AutoTech (portable and desktop computers) Hardware and Warranty Support (Dell TV, Printers, and Projectors) for Relationship customers Consumer (Home and Home Office) Support for Dell products Customer Service Employee Purchase Program (EPP) Customers Financial Services Web Address Financial Services (lease/loans) Financial Services (Dell Preferred Accounts [DPA]) Business Customer Service Employee Purchase Program (EPP) Customer s Support for printers, projectors, PDAs, and MP3 players Public (government, education, and healthcare) Customer Service and Support Employee Purchase Program (EPP) Customers Dell Sales	toll-free: 1-800-433-9014 toll-free: 1-800-247-9362 toll-free: 1-877-459-7298 toll-free: 1-800-624-9896 toll-free: 1-800-624-9897 toll-free: 1-800-695-8133 www.dellfinancialservices.com toll-free: 1-877-577-3355 toll-free: 1-800-283-2210 toll-free: 1-800-624-9897 toll-free: 1-800-695-8133 toll-free: 1-877-459-7298 toll-free: 1-800-456-3355 toll-free: 1-800-695-8133 toll-free: 1-800-289-3355 or toll-free: 1-800-879-3355

	Dell Outlet Store (Dell refurbished computers)	toll-free: 1-888-798-7561
	Software and Peripherals Sales	toll-free: 1-800-671-3355
	Spare Parts Sales	toll-free: 1-800-357-3355
	Extended Service and Warranty Sales	toll-free: 1-800-247-4618
	Fax	toll-free: 1-800-727-8320
	Dell Services for the Deaf, Hard-of-Hearing, or Speech-Impaired	toll-free: 1-877-DELLTTY (1-877-335-5889)
U.S. Virgin Islands	Web Address	www.dell.com/vi
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	toll-free: 1-877-702-4360
Venezuela	Web Address	www.dell.com/ve
	E-mail Address	la-techsupport@dell.com
	Technical Support, Customer Service, Sales	0800-100-4752

2 Installation

The vReplicator installation process is simple. After you confirm that all requirements and pre-requisites have been met, identify the following:

- VCs and/or hosts that you want to configure.
- Default settings for replication type and frequency.
- Default limits for simultaneous replications.
- Default recipients for replication job notification.
- Users who should receive alerts when storage is low.

System Requirements

This section describes the hardware and software requirements for vReplicator installation.

Location Requirements

vReplicator requires a physical or virtual machine running Windows 2000 SP4, Windows 2003 SP1 or SP2, and .NET Framework version 2.0. For optimal performance, it is best to install vReplicator on a physical machine. If you install the software on a VM, it is best to do so on one that is running Windows 2003 rather than XP. For the Vizioncore VSS agent to work, you must have MS VSS installed. For MS VSS to work, the machine must be running Windows 2003 R2, SP1, SP2, or SP4 and .NET 2.0.

You can confirm that you have .NET Framework v2.0 installed by accessing Start→Add or Remove Programs. You can install .NET Framework v2.0 through Internet Explorer→Tools→Windows Update. Alternately, you can download it from the Microsoft website.

The physical or virtual machine must also meet the following criteria:

- Pentium III class CPU or greater
- 256 MB RAM (512 MB recommended)
- 2 GB free hard disk space (4 GB or greater recommended)
- 1024x768 video resolution (1280x1024 or greater recommended)
- 100 Mb/sec or greater network adapter
- Unimpeded network secure shell access (SSH)—port 22—from vReplicator to both the source and destination servers

VMware ESX Server Requirements

User Accounts and Passwords

For each replication source and destination VM, you must use a login with appropriate permissions. vReplicator requires the use of root, non-root, and system administrator (SA) IDs and non-root and SA passwords. This section contains information specific to vReplicator password requirements. For additional information, see the *General Password Security Guidelines* section at the end of this chapter.

Switch User/Root Access

vReplicator requires root access. For security reasons, many ESX Servers are configured so that a root user cannot log in directly from another computer. To gain root access, vReplicator must connect with a non-root user ID and then switch user (su) to the root account. For the non-root ID and password, it is best to use the same ID and password that you selected for VC.

System Administrator Access

vReplicator also requires SA access; for example, when you install a new instance of MS SQL Express 2005. The SA password must meet SQL Server password policy requirements. In general, SA passwords should be complex but memorable. The passwords should be written down and adequately protected, but accessible to those who need them.

Password Security Setting Policy

Weak passwords compromise system security. The MS Windows security setting policy has been enabled and configured for vReplicator passwords. When you create and update passwords in vReplicator, follow as many of these guidelines as your environment allows:

- A password should not include a significant portion of a user or account name.
- Each password should be at least six characters long.
- Passwords should contain characters from several of these categories:
 - Uppercase letters in English (A-Z)
 - Lowercase letters in English (a-z)
 - Digits 0-9
 - Non-alphabetic characters (for example, \$, !, #, %)

Source

These are the requirements for the source machine:

- You do not need to complete any installations on the source VMFS.
- The source VMFS must be formatted for ESX 3.

- To perform a hot replication, vReplicator requires 6 GB of free space on the source VMFS.

Destination

These are the requirements for the destination machine:

- You do not need to complete any installations on the destination VMFS.
- The destination VMFS must be formatted for ESX 3 and have enough free disk space to store the replicated VM.

Note: For larger VMs (i.e., larger than 256 GB), confirm that the destination machine can support the file size.

Interoperability Requirements

vReplicator and vRanger Pro share a unique interoperability. For their snapshot file locking mechanism to function properly, certain environment requirements must be met. vRanger Pro 3.15-3.2.3 is compatible with vReplicator 2.0-2.5. If you are using vRanger Pro to enhance VMware Consolidated Backup (VCB), consult the list below as a general guideline.

vReplicator 2.5 works with the following:

- VMware ESX Server 3.5, Update 1
- VMware ESX Server 3.5
- VMware ESX Server 3.0.2
- VMware ESX Server 3.0.1

- VMware VirtualCenter 2.5, Update 1
- VMware VirtualCenter 2.5
- VMware VirtualCenter 2.0.2, Update 3
- VMware VirtualCenter 2.0.2, Update 2
- VMware VirtualCenter 2.0.2, Update 1
- VMware VirtualCenter 2.0.2
- VMware VirtualCenter 2.0.1

The following are not supported at this time:

- VMware ESX Server 2.5.4
- VMware ESX Server 2.5.3

- VMware ESX Server 2.5.2
- VMware ESX Server 2.5.1
- VMware ESX Server 2.5.0
- VMware ESX Server 2.1.3
- VMware ESX Server 2.1.2
- VMware ESX Server 2.0.2

Vizioncore Support Policy

Vizioncore attempts to support all .dot versions of ESX Server within 60-90 days of release. However, changes to the platform can create unforeseen circumstances, causing an unexpected delay in providing support.

Support for all major versions of ESX Server is to be determined. Vizioncore has the right to change this policy without prior notice or notification.

Database Requirements

vReplicator requires a SQL database to record replication job information. The process below describes installing a new instance of SQL Express 2005 to configure the product database.

Port Requirements

Before beginning the installation, confirm that the ports listed below are available. If your environment includes any component (e.g., a firewall) that might restrict communication between the machines involved in replication, make certain that these ports allow for unimpeded access.

Port	Direction	Function
22 TCP	vReplicator: outgoing Host servers: incoming and outgoing	Unimpeded network SSH access from vReplicator to both VI3 hosts. Bidirectional access between source VI3 and destination VI3.
443 TCP	vReplicator: outgoing	Used for VI3 host communications and VC 2.x.
902 TCP	vReplicator: outgoing	Used for VI3 host communications and VC 2.x.
<p>Note: Root SSH access is disabled by default in ESX Server 3.0. Setting up a non-root account and providing vReplicator with the root password allows for replication with root disabled over SSH. Otherwise, you can enable root over SSH by editing the PermitRootLogin value in sshd_config on this unit: vi /etc/ssh/sshd_config</p>		

Installation Support

The following are supported:

OS	Service Pack	Bit Level
Windows 2000	SP4	32
Windows XP	SP1 and SP2	32
Windows 2003	SP1 and SP2	32
Windows 2003 R2	SP1 and SP2	32

The following are not supported at this time:

OS	Service Pack	Bit Level
Windows Vista	N/A	32 and 64
Windows Vista	SP1	32 and 64
Windows 2003	SP1 and SP2	64
Windows 2003 R2	SP1 and SP2	64
Windows 2008	N/A	32 and 64

Guest VSS Support

The following are supported:

OS	Service Pack	Bit Level
Windows 2003	SP1 and SP2	32

The following are not supported at this time:

OS	Service Pack	Bit Level
Windows 2000	SP4 and SP5	32
Windows 2003 R2	SP1 and SP2	64
Windows XP Pro	SP1 and SP2	32 and 64
Windows Vista	N/A	N/A
Windows 2008	N/A	N/A

Guest OS for Replication Support

The software can replicate any guest OS that any VMware ESX Server supports as long as vReplicator supports that underlying version of ESX. Snapshots must be fully functional against the VM guest OS that the VM virtual server supports. That is, there must be no known VMware snapshot issues. Please refer any snapshot issues to VMware Customer Support.

Installing vReplicator

This section will guide you through installing vReplicator on a workstation or server. Since network latency can compromise vReplicator performance, the software should not be installed on a network drive.

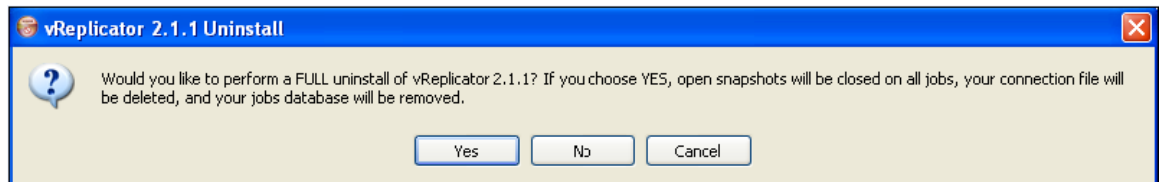
Pre-requisites:

- You must have administrator privileges on the workstation or server on which you install the software.
- You must remove any previously installed version of vReplicator before beginning a new installation. See the instructions below.
- You must have access to the installer file—vReplicator.msi.
- Internet Protocol (IP) addresses must be registered to a Domain Name System (DNS) entry. Confirm that all host names are registered within DNS.

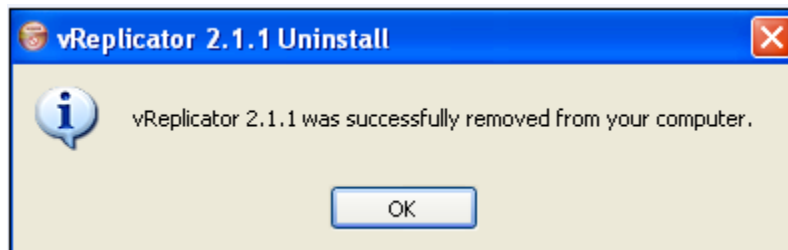
Uninstall Old Version of vReplicator

To uninstall any version of vReplicator, do the following:

1. Access Windows Control Panel→Add or Remove Programs.
2. Click **Change/Remove** in the Add or Remove Programs window.
This message displays:



3. Click **Yes** or **No**.
A confirmation message displays:



You will know that the process is complete when this desktop icon displays:



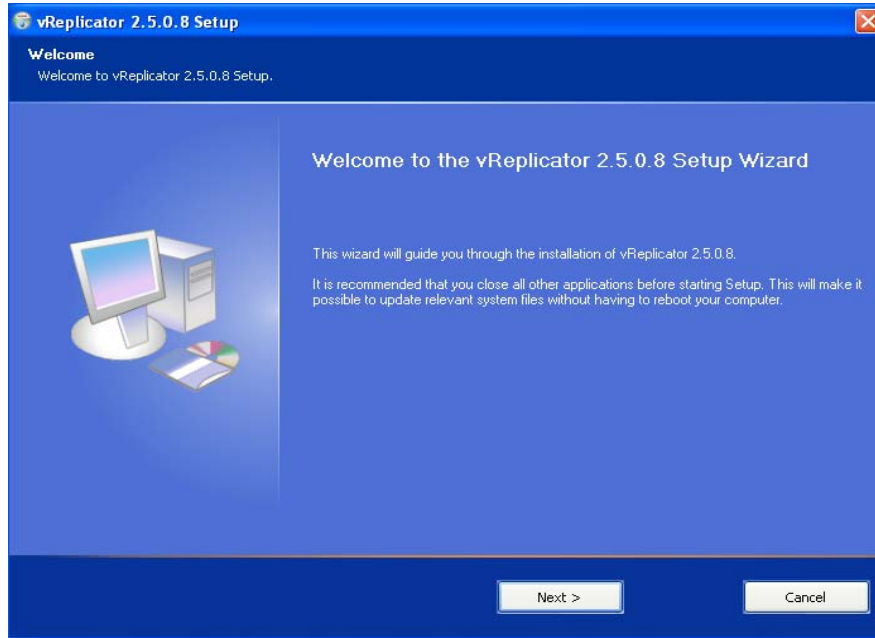
Database Selection

vReplicator requires an SQL database to record job information.

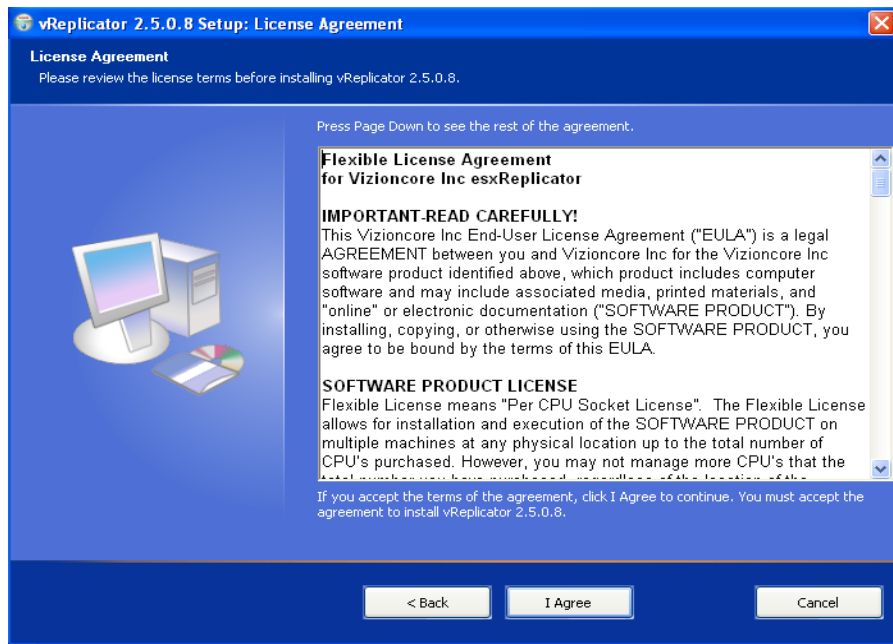
Install on new instance of SQL Express 2005 (radio button)	This method is preferred. If you select this option, a new instance of SQL Express 2005 will be installed on the vReplicator machine and all necessary product database configurations will be completed. Note: This method is not recommended if you plan to install vReplicator on the same machine where VC is installed.
Install on an existing SQL Server 2000/2005 (radio button)	Select this option only if you have access to a SQL Server and have the necessary privileges to create a database on that server.
Install manually (not recommended) (radio button)	This method allows you to create the databases manually, if necessary. During the configuration process, sufficient guidance is provided.

Install vReplicator Using SQL Express 2005 (New Instance)

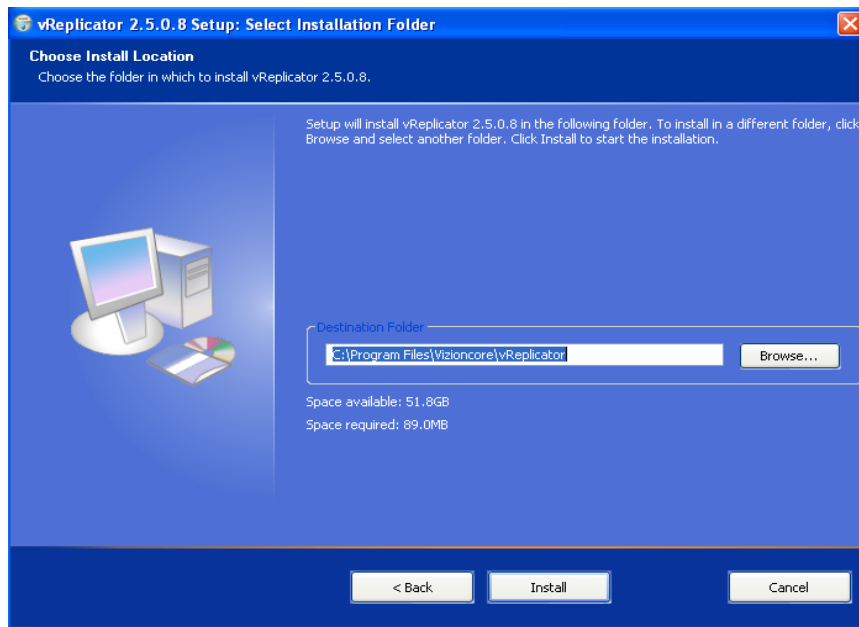
1. From the desktop, double-click the installer file—*vReplicator.msi*—to run it. The vReplicator Setup Wizard dialog displays.



2. Click **Next**. The License Agreement dialog displays.



3. Read the license agreement. If you agree to its terms, click **I Agree**. Then, click **Next**.
The Select Installation Folder dialog displays.



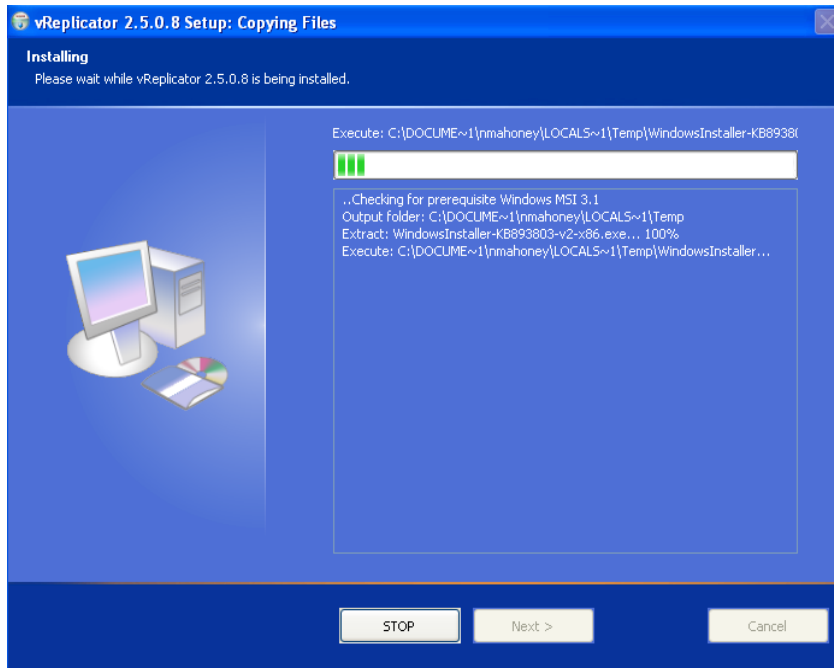
Note: Both the available and required disk space are indicated on the Select Installation Folder dialog.

4. In the Folder field, specify the location where vReplicator should be installed. The default is C:\Program Files\Vizioncore\vReplicator\.

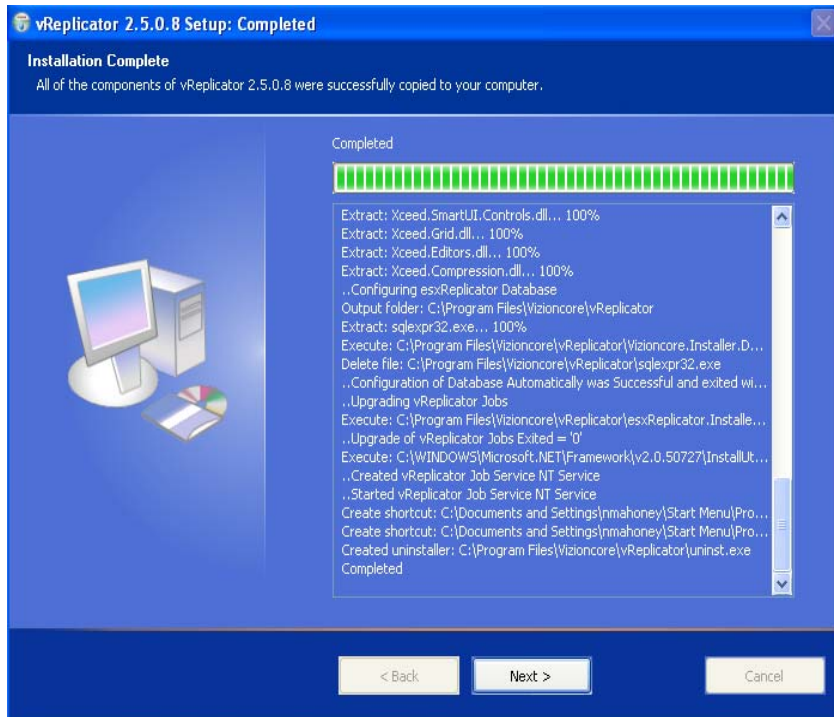
If you want to change the location, edit the path directly. Or, click **Browse** to select a path. Click to highlight the location and then click **OK**.

Warning: vReplicator cannot be installed on a network drive.

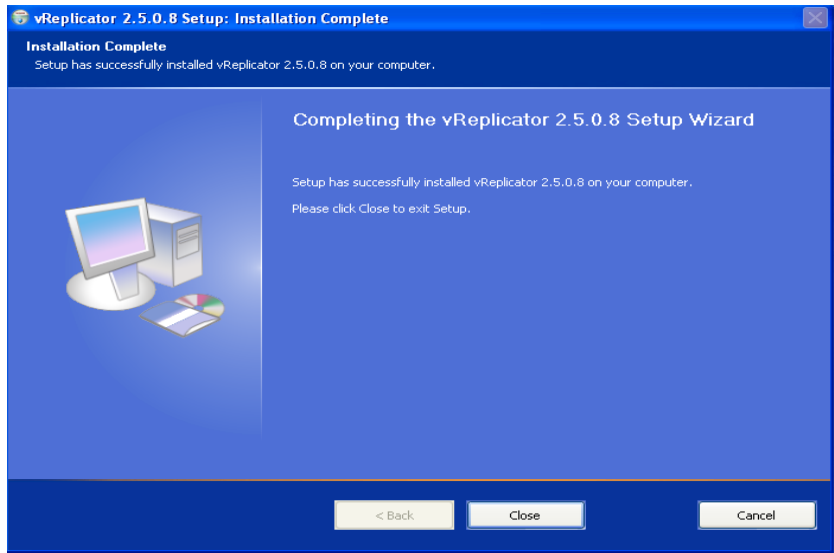
5. Click **Install**.
The file copy process begins.



When the process is complete, the Completed dialog displays.



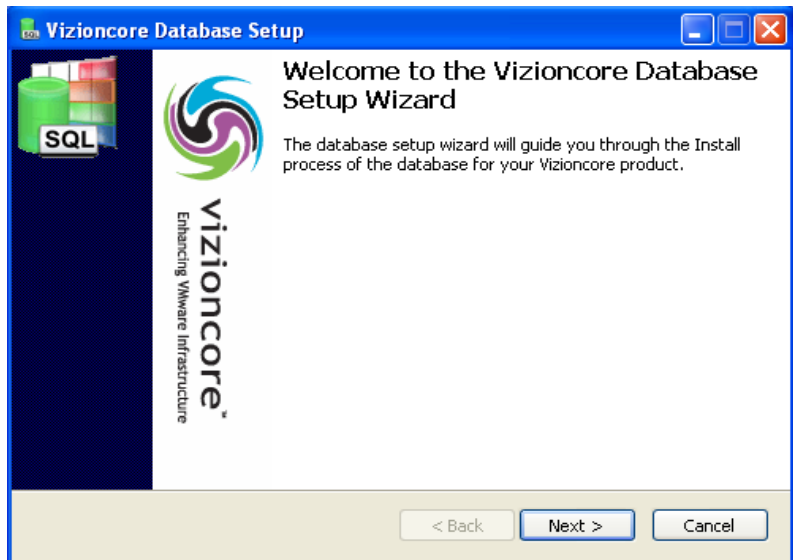
6. Click **Next**.
The Installation Complete dialog displays.

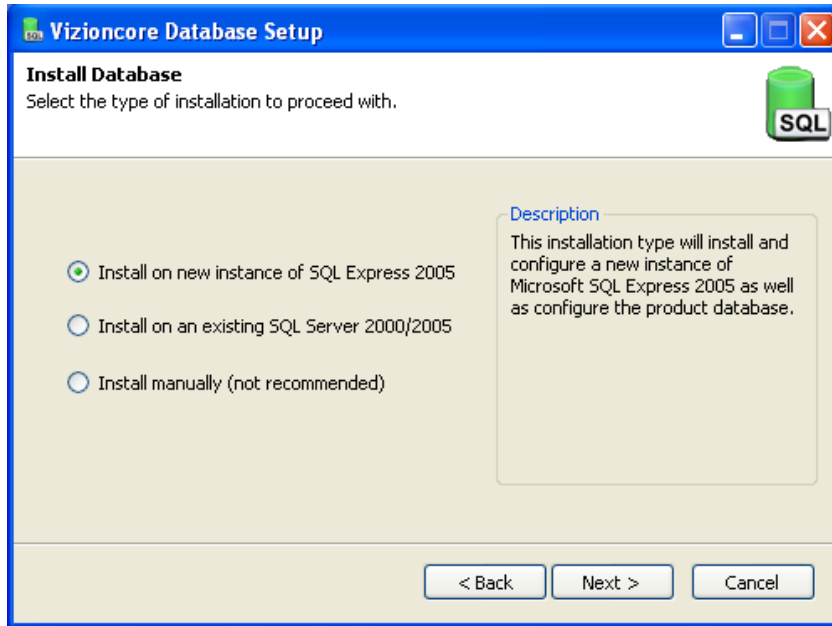


7. Click **Close**.
The vReplicator icon displays on the desktop.



8. On the Database Setup Wizard dialog, click **Next**.
The Install Database dialog displays.

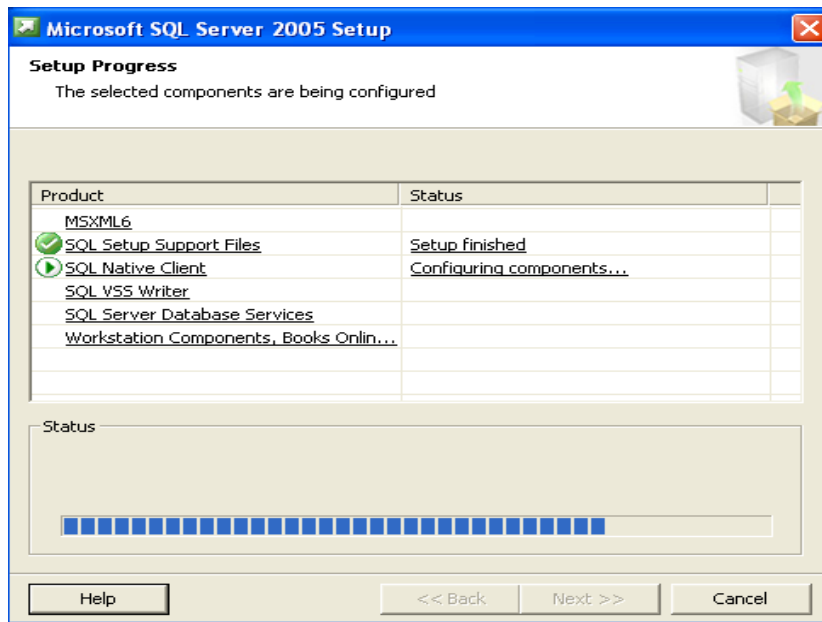
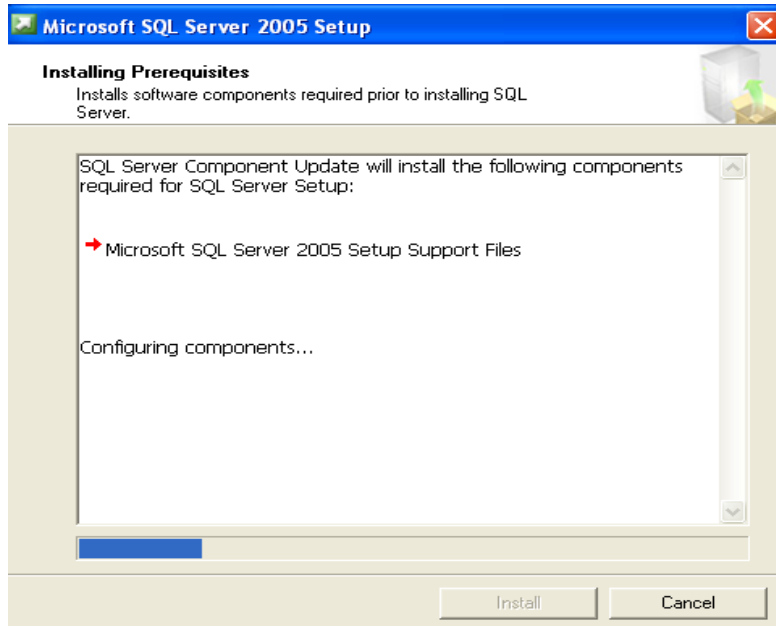




9. On the Install Database dialog, select the **Install on new instance of SQL Express 2005** radio button. Then, click **Next**. The Microsoft SQL Express Install dialog displays.



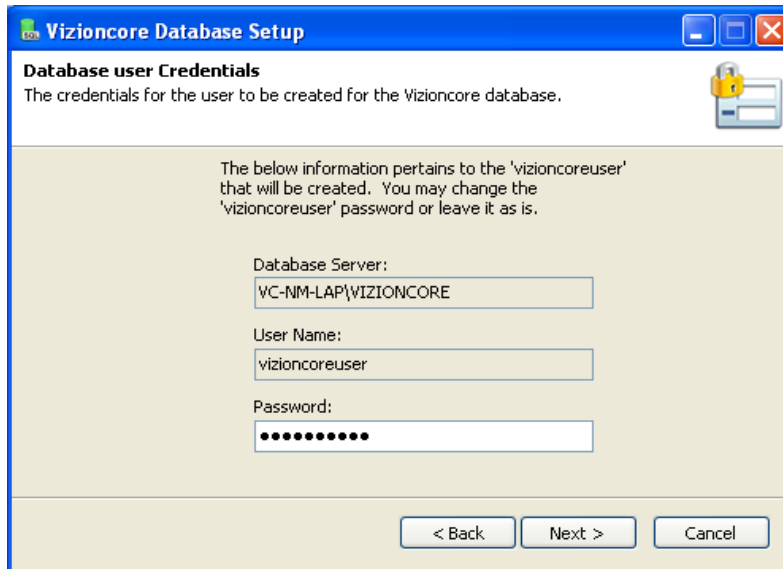
10. In the Password and Confirm Password fields, enter the password for the SA account for this server. Click **OK**. The Setup Progress dialog displays.



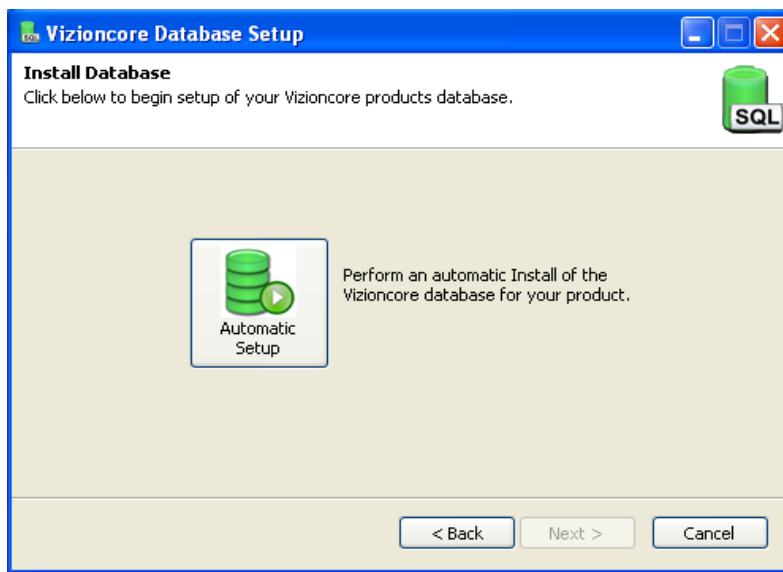
11. Click **Next**.

The Database user Credentials dialog displays. The system auto-populates the Database Server field with (existing SQL database name)\VIZIONCORE and the User Name field with vizioncoreuser. Enter the SA password in the Password field. Click **Next**.

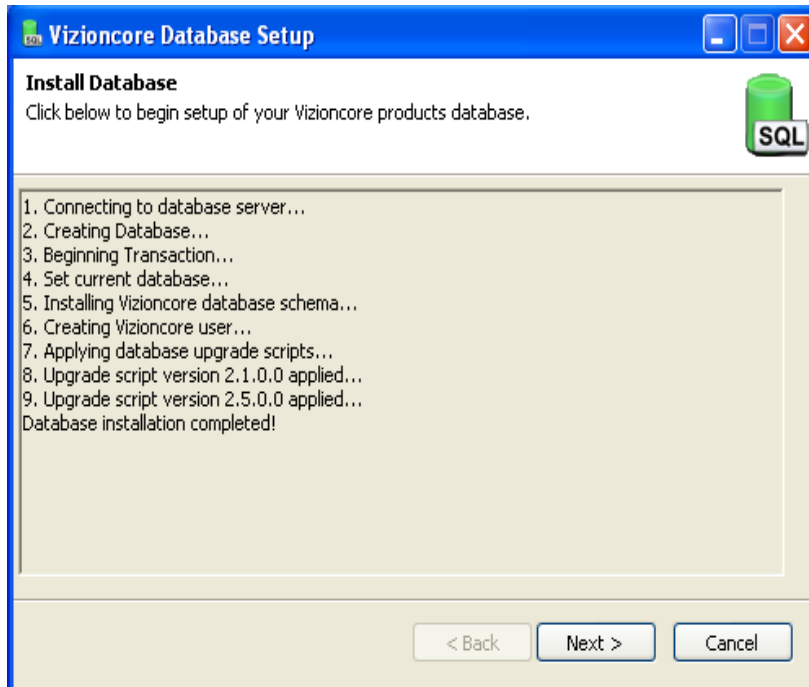
Note: You can change the value in the User Name field.



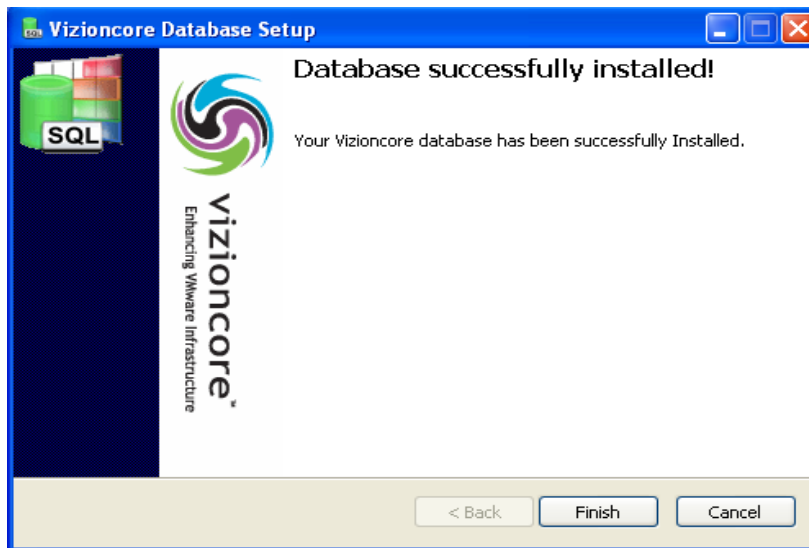
12. Click the *Automatic Setup* icon at the center of the Install Database dialog.



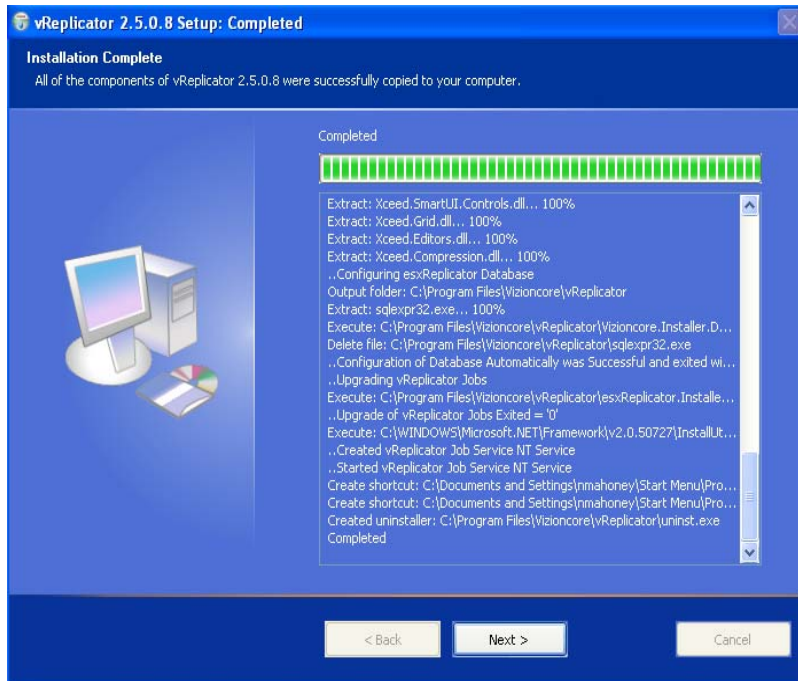
13. When the Next button is enabled, click it.



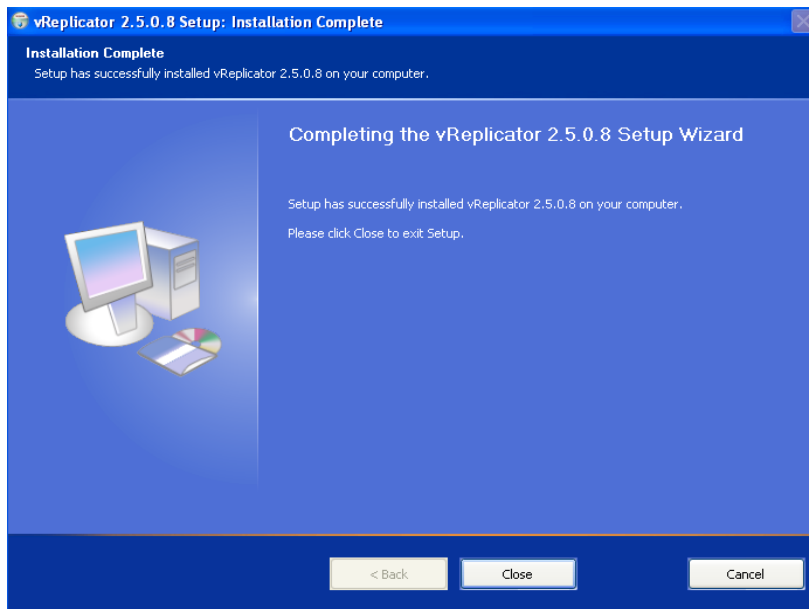
14. Click **Next**.
A confirmation of completion dialog displays.



15. Click **Finish**.
The Completed dialog displays.



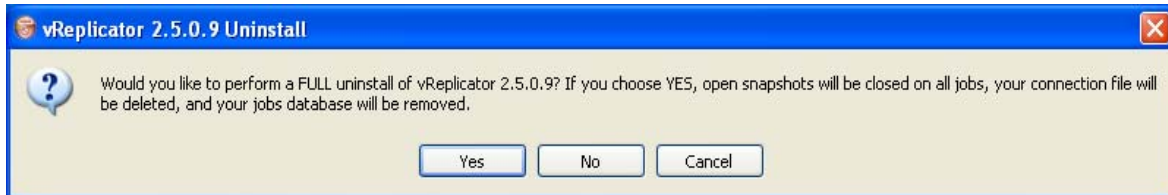
16. Click **Next**.
The Installation Complete dialog displays.



17. Click **Close**.
Installation is complete.

Upgrade to New Version of vReplicator

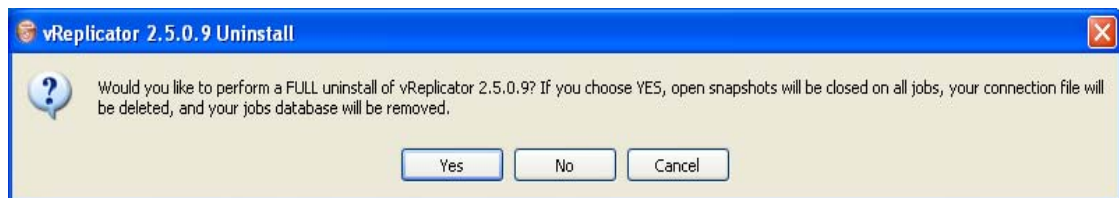
To upgrade to a new version of vReplicator, you must first uninstall any previous version of the software. During this process, you will be prompted about whether you want to complete a full uninstall. Since you are upgrading to a new version, it is best to click No to retain settings and data from the previous version.



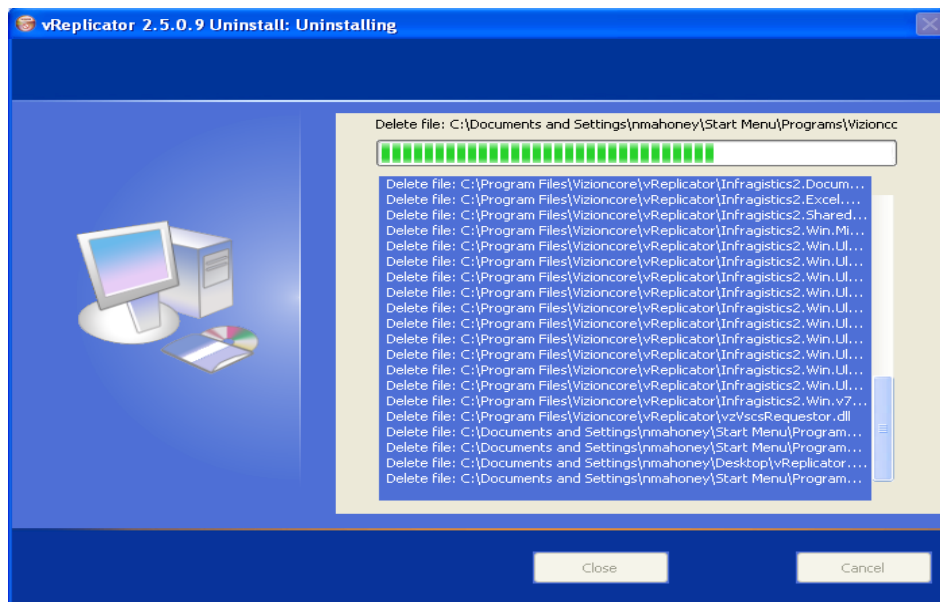
Uninstall vReplicator

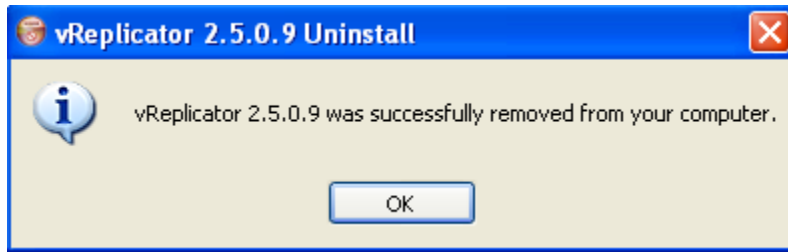
To uninstall any version of vReplicator, do the following:

1. Access Windows Control Panel→Add or Remove Programs.
2. Click **Change/Remove** in the Add or Remove Programs window.
This message displays:

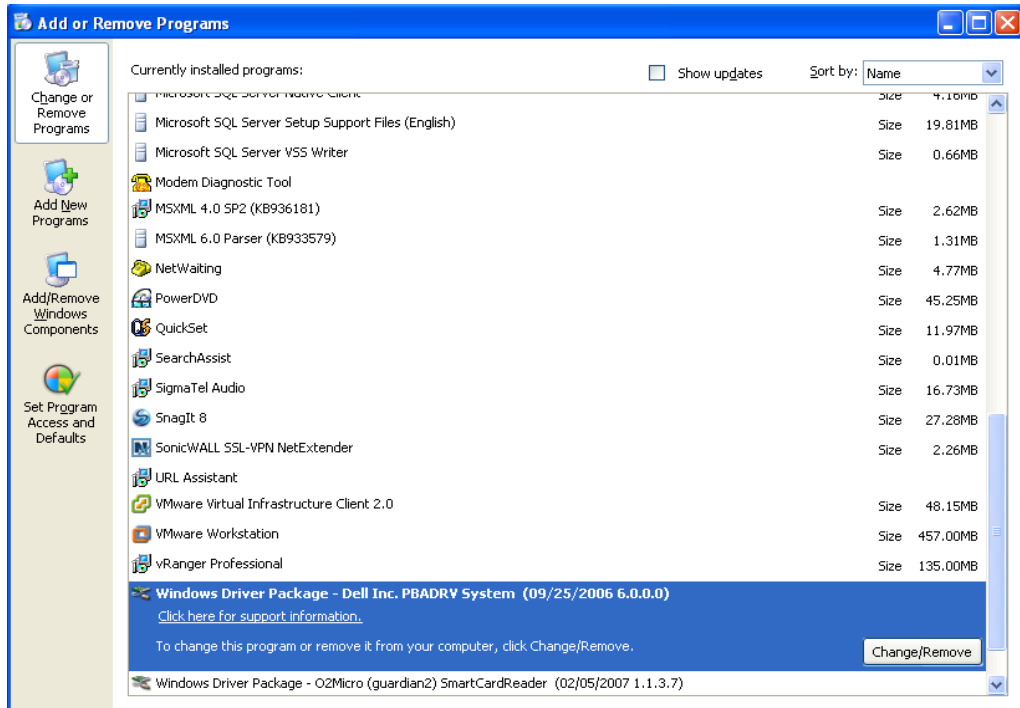


3. Click **No**. To the confirmation message, click **OK**.



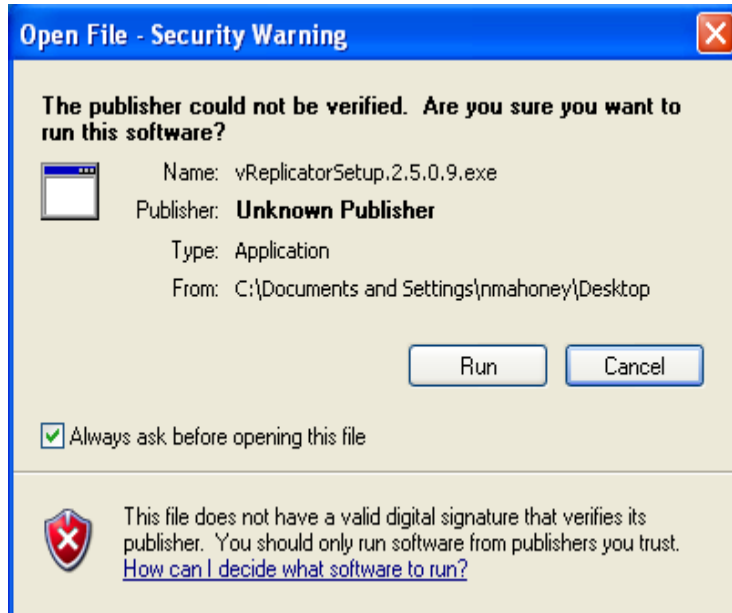


The application will no longer display in the Add or Remove Programs window.

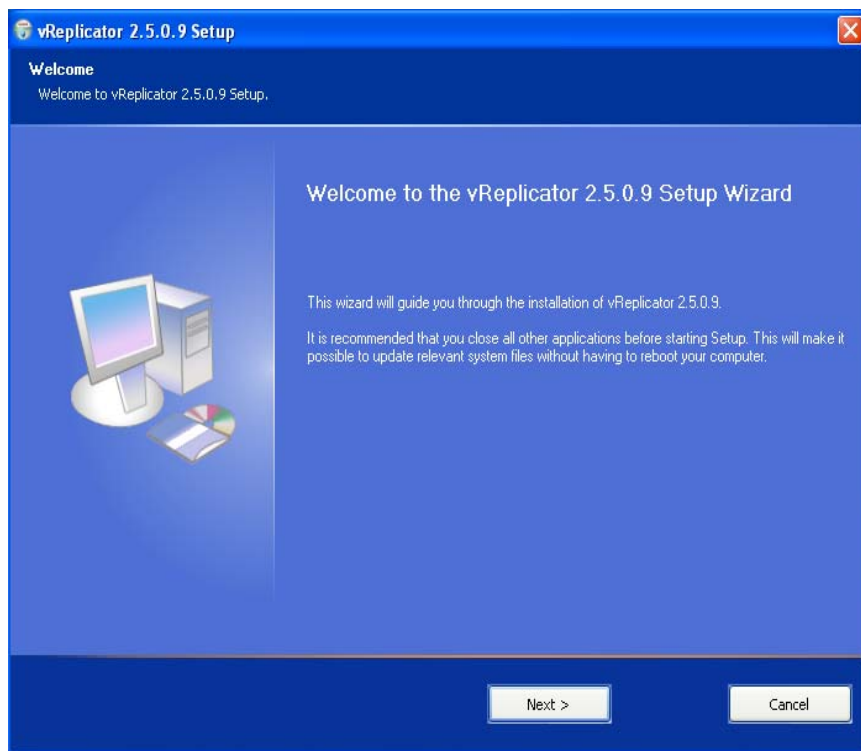


Upgrade to a New Version vReplicator

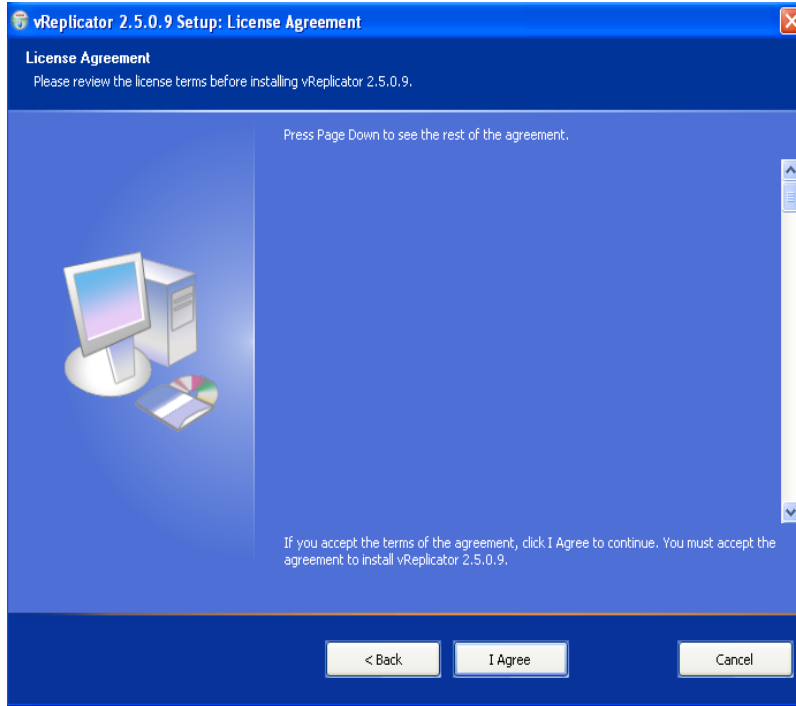
1. From the desktop, double-click the installer file—*vReplicator.msi*—to run it.



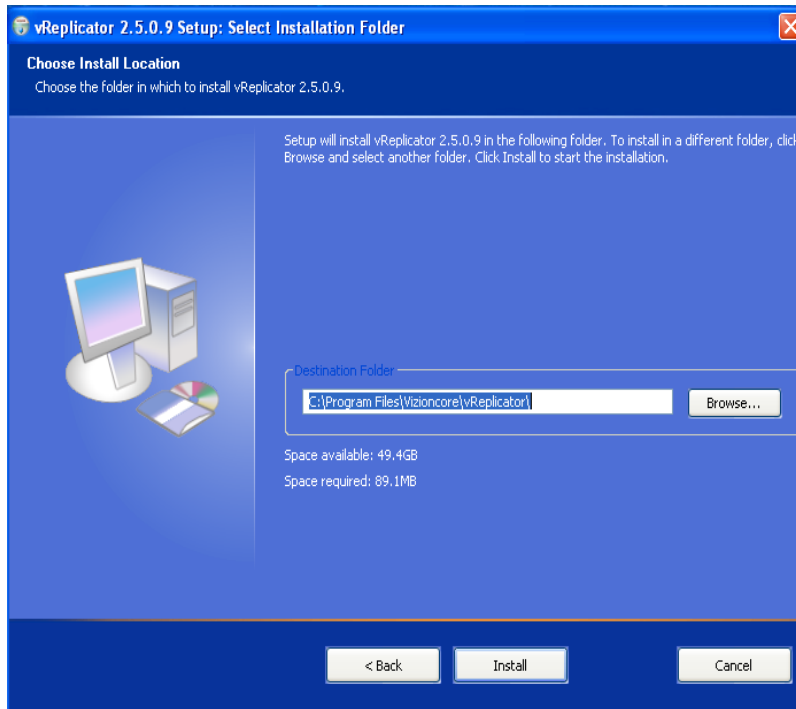
2. Click **Run**.



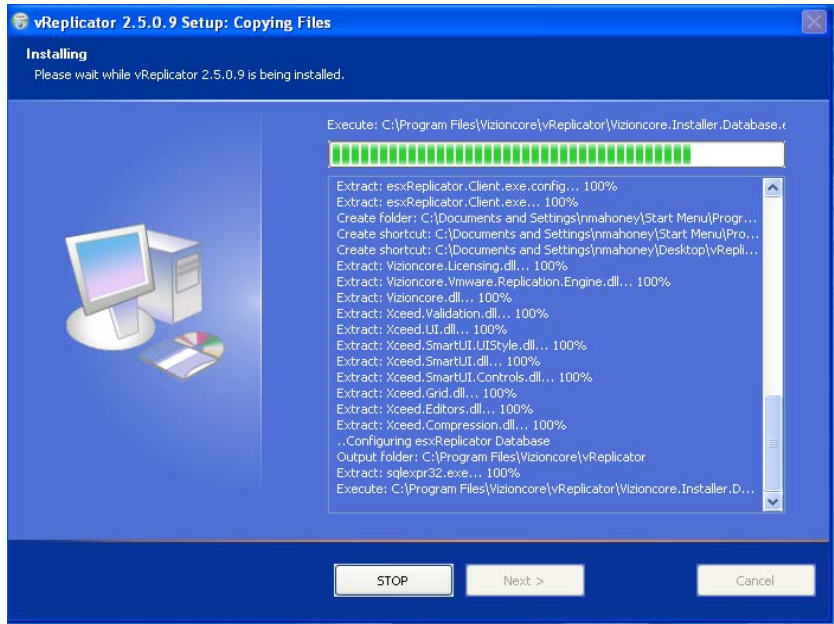
3. Click **Next**.



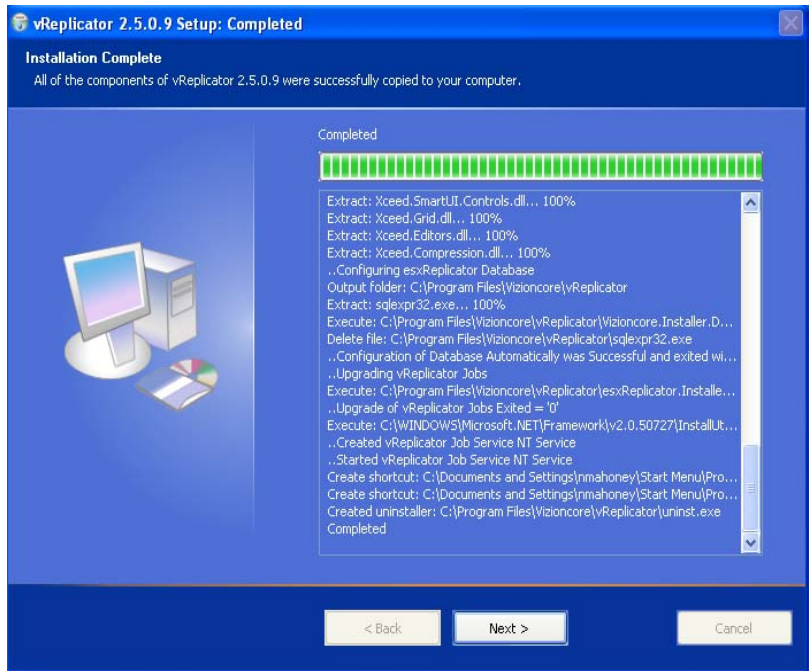
4. Read the license agreement. If you agree to its terms, click **I Agree**.



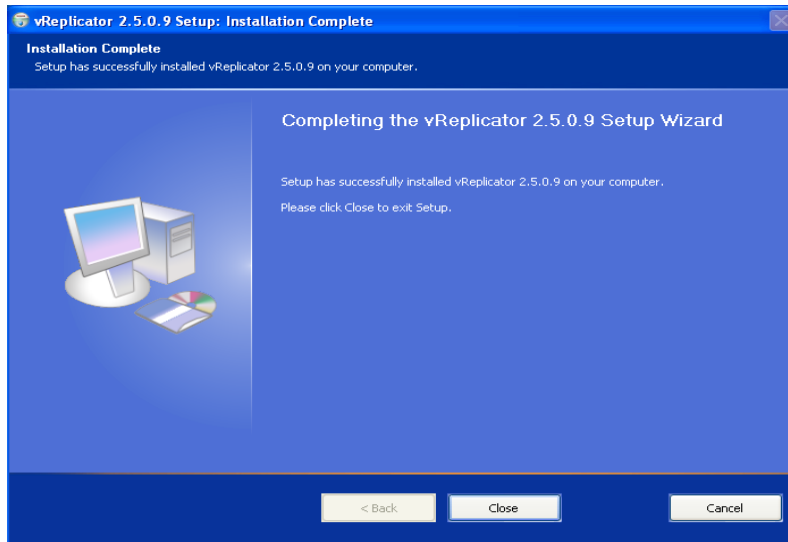
5. Click **Install**.



6. Wait while the files are copied. Then, click **Next**. Installation is complete.



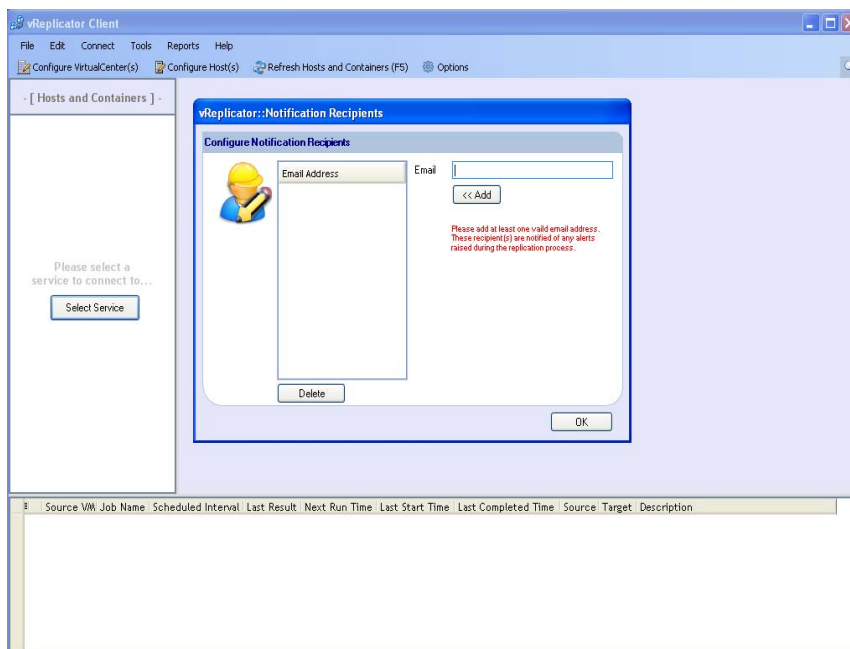
7. Click **Close**.



The vReplicator desktop icon displays.



8. Double-click the desktop icon.
The vReplicator window and Notification Recipients dialog display.



You are now ready to configure vReplicator. To continue, see the Initial Configuration section in Chapter 3.

General Password Security Guidelines

In general, it is best to make each password significantly different than previous passwords. A unique password that contains uppercase and lowercase characters as well as numerals and symbols is ideal. Never share passwords across applications—that is, a password that you use in vReplicator should be distinct from a vRanger Pro password. It is best to avoid incremental passwords. Do not create passwords that include user or company names. Avoid using complete words within passwords. Longer passwords tend to be more secure than shorter ones. Change the password often. Write down each password and store it in a secure place. Discard old passwords.

Before you create a password that includes ASCII characters, confirm that they are compatible with vReplicator. The following ASCII characters are not compatible with vReplicator:

“ ‘ ~ { } [] -

The following ASCII characters may not be compatible with vReplicator:

! @ # \$ % ^ * | \ / ?

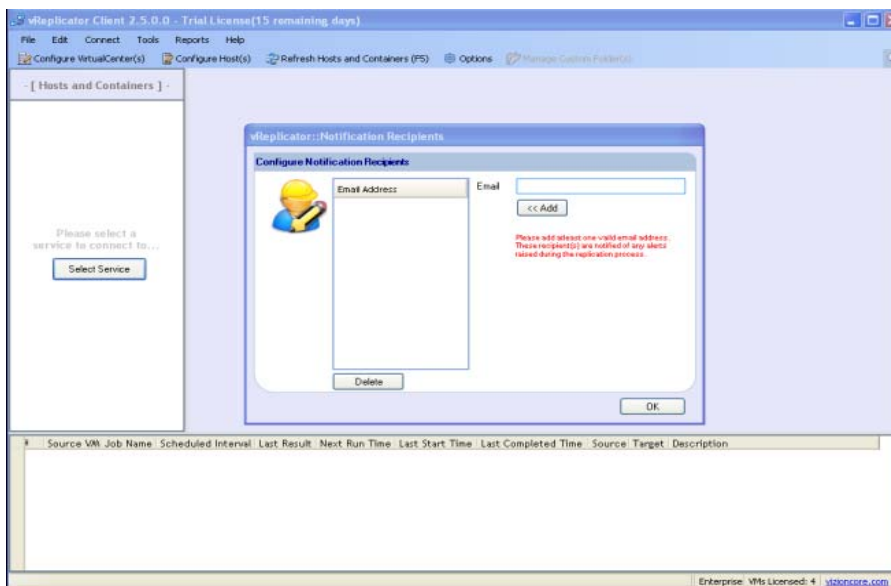
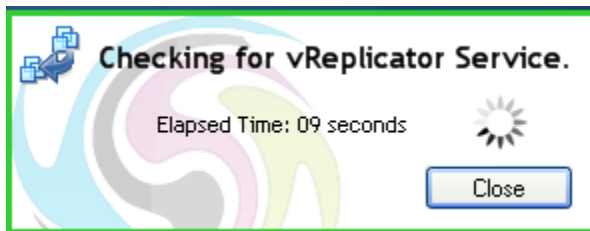
3 Configuration

There are a few configurations that you can make when you access vReplicator for the first time. It can be useful to complete this process so that your default settings are in place for your first replication jobs. The initial configuration process includes:

- Adding notification recipients.
- Selecting interface preferences.
- Defining alerts.
- Establishing replication job defaults.
- Adding and connecting to VCs and hosts.

Getting Started

Now that vReplicator is installed, you can launch it by double-clicking the desktop icon or by accessing the software through the Start menu. When you first access vReplicator, this window might display for up to 60 seconds. Then, the vReplicator window and the Notification Recipients dialog display.



To bypass the initial configuration process, click OK on the Notification Recipients and First Time Setup dialogs upon start up. If you defer the initial configuration process, you can complete all of the tasks associated with configuring the software by following the instructions in Chapter 4.

Initial Configuration

Notification Setup

The configuration process begins with setting up an email notification list. The users on this list can be notified when a replication job is completed or when errors are encountered during replication. One recipient on the list will be designated to receive all notifications by default. For each replication job, you can override this recipient by entering another email address. Notifications contain information about the replication jobs, such as the names of the source and destination servers and the VMs. Each replication job's notification emails can be sent to a different list of addresses, but every potential recipient must be added through the Notification Recipients dialog. On the Email tab, both Default Recipients Email and From Email Address are required fields.

After you set up email notification, vReplicator requires that at least one email address is retained in the system. To read more about this, see the *Remove Email Address* section in Chapter 4.

Email	Enter an email address in this field to include the recipient in the notifications list. One address on the list—which you will select on the Email tab of the Options dialog—will be the default recipient for all notifications.
Email Address (text box)	This text box displays all of the email addresses of the recipients currently configured to receive notifications.

First Time Setup

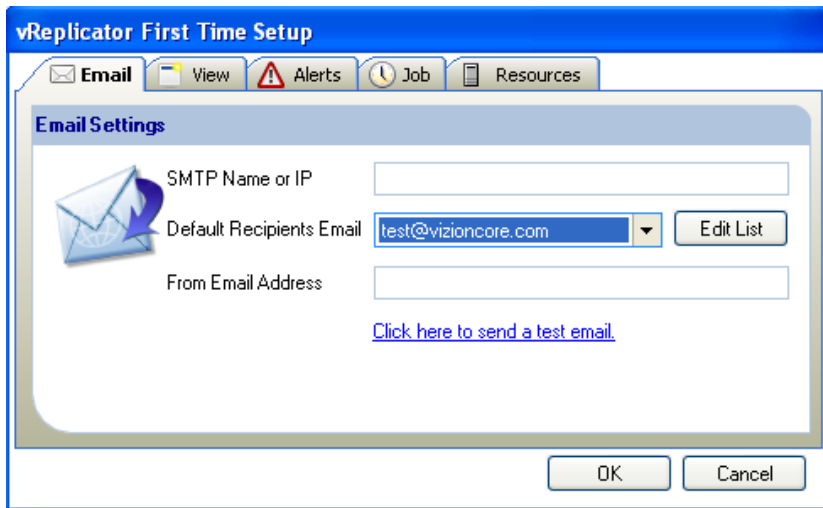
The First Time setup dialog features several tabs that allow you to establish default settings for replication jobs. If you use the drag and drop replication method, these settings will be triggered automatically. If you use the Replication Job Wizard, the system will prompt you to override these settings from job to job. If you decide to skip the initial configuration, you can define default settings later through the Options dialog by selecting Tools→Options from the Menu Bar or by clicking Options in the Toolbar. The First Time Setup and the Options dialogs are identical. See Chapter 4 for specific instructions.

The First Time Setup/Options dialog features these tabs, all of which are described in more detail below.

- **Email**—Use the fields on this tab to configure mail servers, email notification recipients, and to test email transmission.
- **View**—Use these fields to define interface preferences such as tree structure expansion level and menu labels for the Toolbar icons.

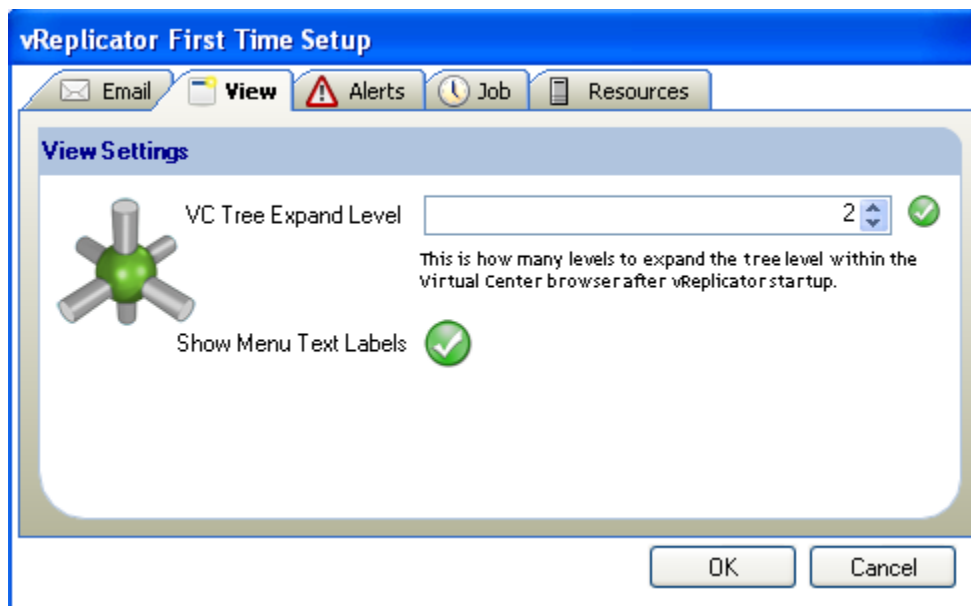
- Alerts—Configure storage alert options using the fields on this tab.
- Job—On this tab, you can set default replication job options that include replication type and frequency.
- Resources—This tab features several fields that allow you to manage simultaneous replication jobs.



Email Tab



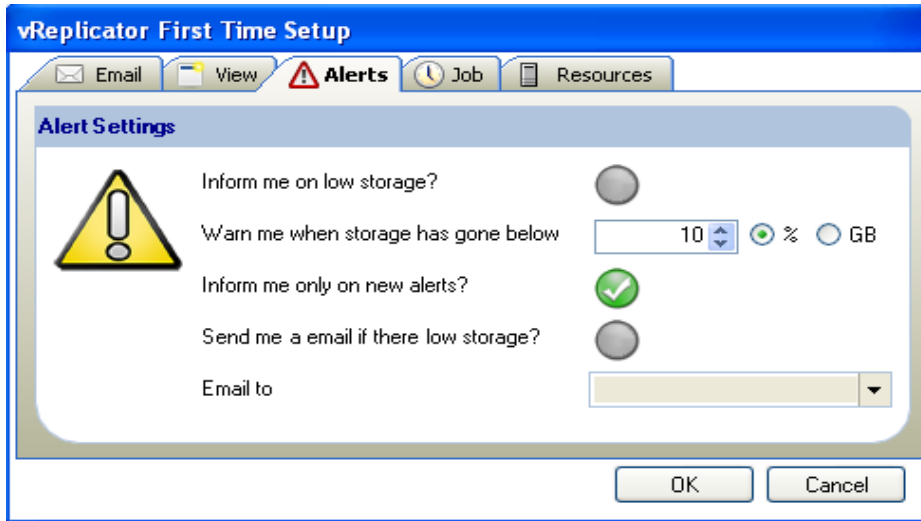
SMTP Name or IP	The name or IP address of the Simple Mail Transfer Protocol (SMTP) server used to send the email.
Default Recipients Email (dropdown)	This field is auto-populated with the email addresses that you entered in the Notification Recipients dialog. The address that you select in this field will receive notifications pertaining to all replication jobs.
Edit List	Click this button to access the Notification Recipients dialog, where you can update existing email address information and add recipients.
From Email Address	This email address displays in the From line of the notifications sent to the address selected in the Default Recipients Email field.
Click here to send a test email. (link)	Clicking this link initiates a required process that tests the connection to the address selected in the Default Recipients Email field. When you click the link, a confirmation message displays, indicating that the email was sent and requesting that you confirm receipt.

View Tab



<p>VC Tree Expand Level (spin box)</p>	<p>The value in this field indicates the level of expansion for the VC tree in the Hosts and Containers pane. You can select a value between 2 and 100. By default, the expansion level is 2. The  icon adjacent to the field indicates that the value is valid. If a  displays, the value is invalid.</p>
<p>Show Menu Text Labels (checkmark button)</p>	<p>This field controls whether the text labels in the Toolbar of the vReplicator window display. By default, this field is selected. If you do not want to display the Toolbar text that corresponds to the icons, clear this field.</p>

Alerts Tab



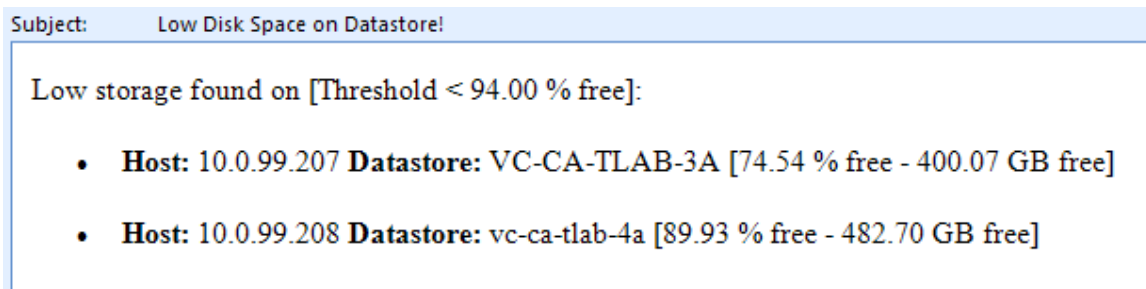
<p>Inform me on low storage? (checkmark button)</p>	<p>If this field is selected, an alert displays in the Replication Management pane when storage space goes below the setting defined on this tab—as a percentage (%) or in gigabytes (GB). In addition, an email notification is sent to the user selected in the Default Recipients Email field.</p>
<p>Warn me when storage has gone below _____ (% or GB) (spin box and radio buttons)</p>	<p>In this field, you define the storage level threshold for the alert. Using the spin box, enter a numerical value up to 100 (%) or between 0 and 9999 (GB). Select a threshold type to measure storage levels—% or GB. The default values for this field are set at 10 and %.</p>
<p>Inform me only on new alerts? (checkmark button)</p>	<p>By default, this field is selected. The user who is currently logged in will receive alerts via the interface.</p>
<p>Send me a email if there low storage? (checkmark button)</p>	<p>Use this checkmark button to indicate whether an email notification should be sent when storage is low. If this field is selected, the Email to field will become enabled. The notification can be sent only if an email address has been added through the Notification Recipients dialog.</p>
<p>Email to (dropdown)</p>	<p>This field is auto-populated with the email addresses entered through the Notification Recipients dialog. The field becomes enabled only if the Send me a email if there low storage field is selected.</p>

vReplicator can be configured to display an alert or send an email notification when a defined storage threshold has been crossed. The software pulls storage data from VC to create a datastore summary. No manual entry is required. For additional information on datastore summaries, see Chapter 4.

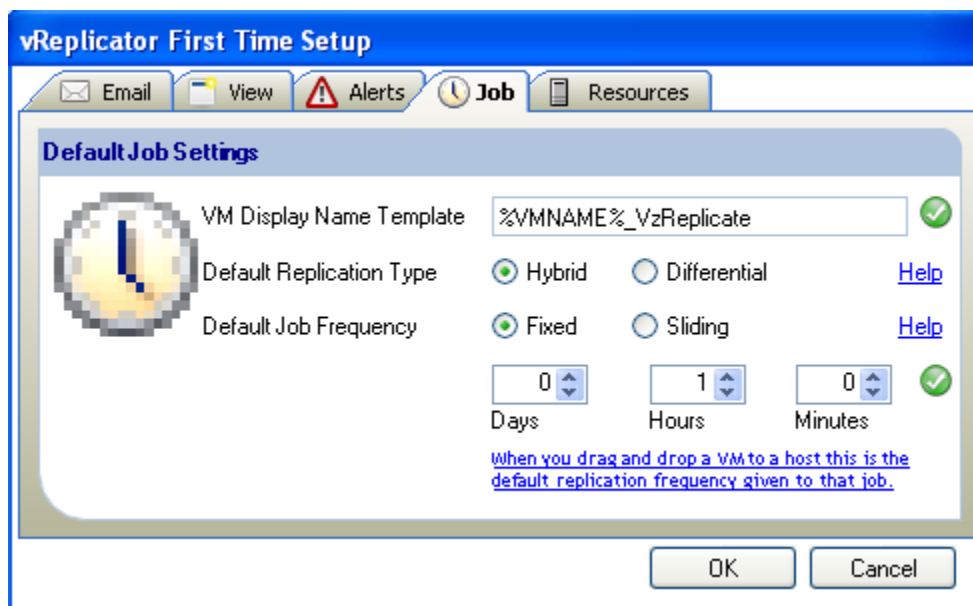
If you request an interface-based alert, this message displays in the Replication Management pane:







If you request an email notification to trigger when storage is low, a message similar to this one is sent to the address selected in the Email to field on the Alerts tab:



Job Tab



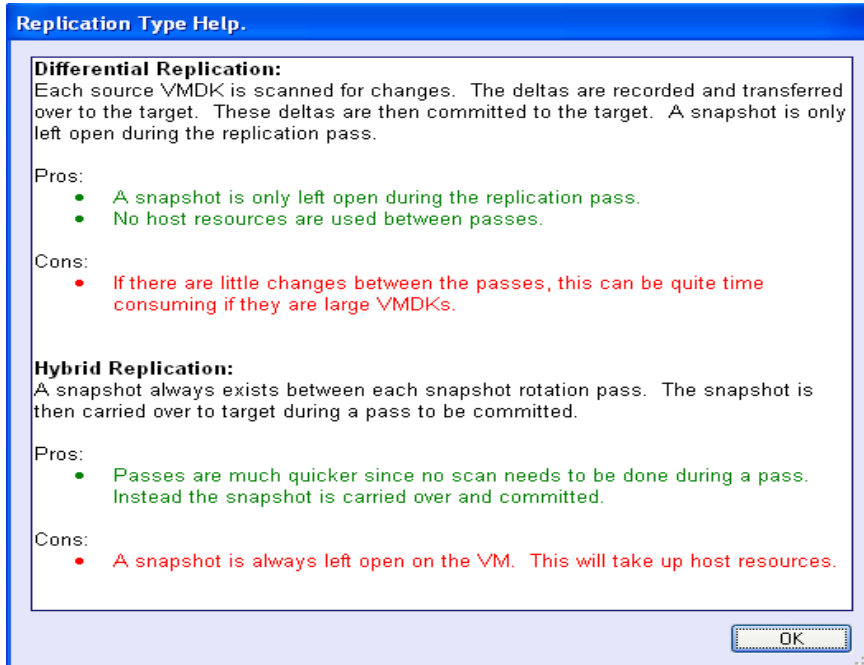
<p>VM DisplayName Template Need space between display and name.</p>	<p>This is the template that vReplicator uses to name destination VMs. When you view a VC environment, the value in this field is appended to the VC display name of the replicated VM. For example, a replicated VM named TestVM2 will display as TestVM2_VzReplicate on the destination host.</p> <p>This field is pre-populated with %VMNAME%_VzReplicate. A  icon displays next to the field when the value is valid.</p> <p>Warning: %VMNAME% is a variable that should not be altered or deleted. If you attempt to do either, your settings will not be retained until you restore the variable. In this case, the  icon adjacent to the field will change to a  icon.</p> <p>You can change this portion of the template name: _VzReplicate.</p>
<p>Default Replication Type (radio buttons)</p>	<p>Using this field, you can set a default replication type. For each job initiated through the Replication Job Wizard, you can override this setting.</p> <p>Hybrid (the default): This replication type combines snapshots and differential replication without initiating a scan of the source VM. The snapshot is sent to the destination and committed. The source and destination VMs are resynchronized using a method that does not require the entire VM image to be resent. During hybrid replication, a snapshot is always left open on the source VM. During a pass, a snapshot count is taken to confirm that the source VM has only one snapshot open and the destination VM has none. If there is a loss of connection during a pass, any open snapshots will remain so. Until the connection is restored, all future replications will fail—due either to the host being down or the number of open snapshots surpassing the maximum. For a source VM, the maximum is two; for the destination VM, the maximum is one.</p> <p>Differential: During this type of replication, the source VMDK is scanned for changes. The changes are recorded, transferred to the destination, and then committed. A snapshot is left open only during the replication pass.</p> <p>Adjacent to this field, there is a <i>Help</i> link. Click it to access a window that contains additional information about the replication types.</p>

<p>Default Job Frequency (radio buttons and spin boxes)</p>	<p>Use these options to set the default replication job schedule. For each job initiated through the Replication Job Wizard, you can override this setting.</p> <p>Fixed: This frequency type defines a set interval between the time the first job starts and the time the next job starts. For example, if a VM requires 10 minutes to replicate and you set the fixed interval to 1 hour, the first job will begin at 7:00 and complete at 7:10. The next job will begin at 8:00. If a VM takes 70 minutes to replicate and you set the interval to 1 hour, the first job begins at 7:00 and finishes at 8:10. The next job will begin at the next scheduled interval (10:00).</p> <p>Sliding: This frequency type defines a set interval between the time the first job ends and the time the next job starts. For example, if a VM requires 10 minutes to replicate and you set the sliding interval to 1 hour, the first job will begin at 7:00 and complete at 7:10. The next job will begin an hour later, at 8:10.</p> <p>In this field, there are three spin boxes—Days, Hours, and Minutes. A  icon displays next to the spin boxes to indicate that the values are valid. By default, Fixed is selected at 0 Days, 1 Hours, and 0 Minutes.</p> <p>Adjacent to the field, there is a Help link. Click it to access a window that contains additional information about the replication frequency types.</p>
<p>When you drag and drop a VM to a host this is the default replication frequency given to that job. (link)</p>	<p>Clicking this link accesses a window that describes the options for initiating a replication job. You can initiate a job through the Replication Job Wizard or you can drag and drop VMs between hosts.</p>

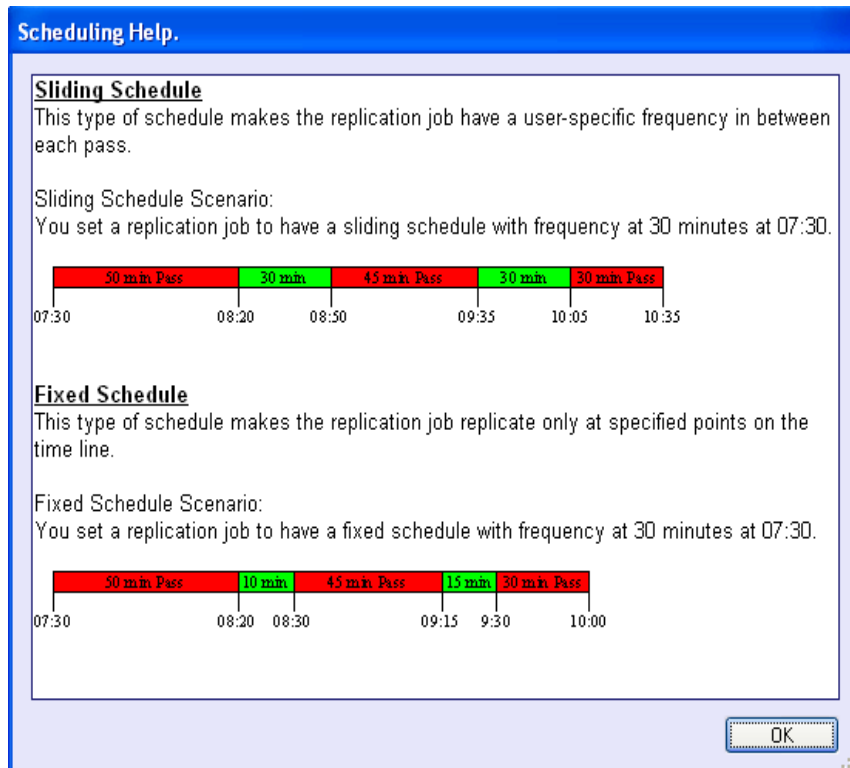
Help Windows

There are several help windows that can be accessed through the Job tab.

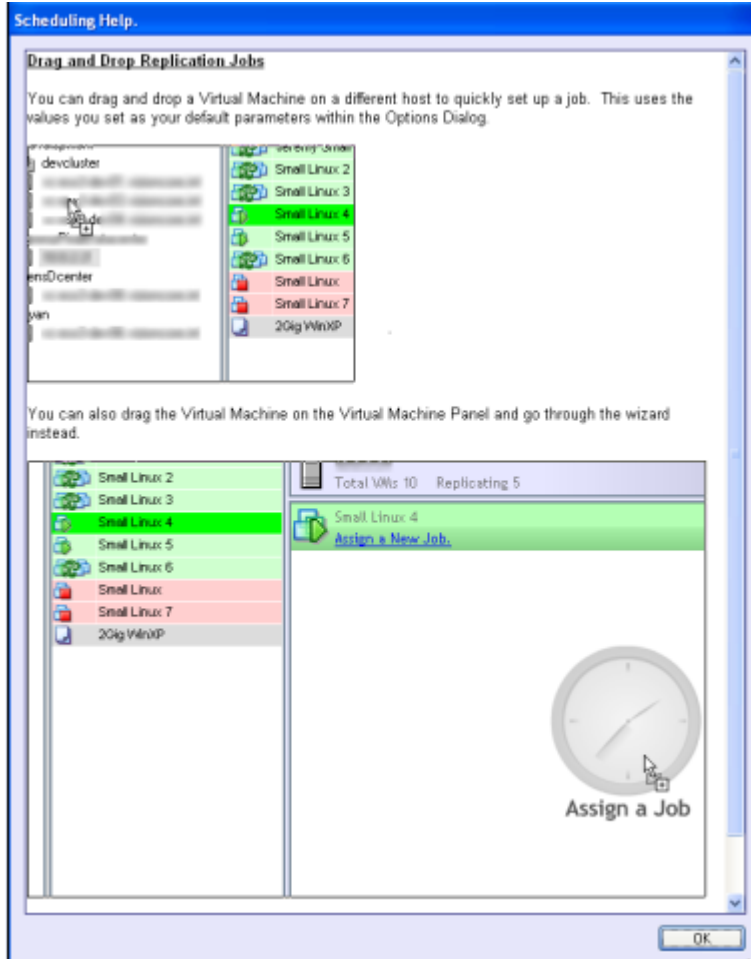
Default Replication Type Help Window



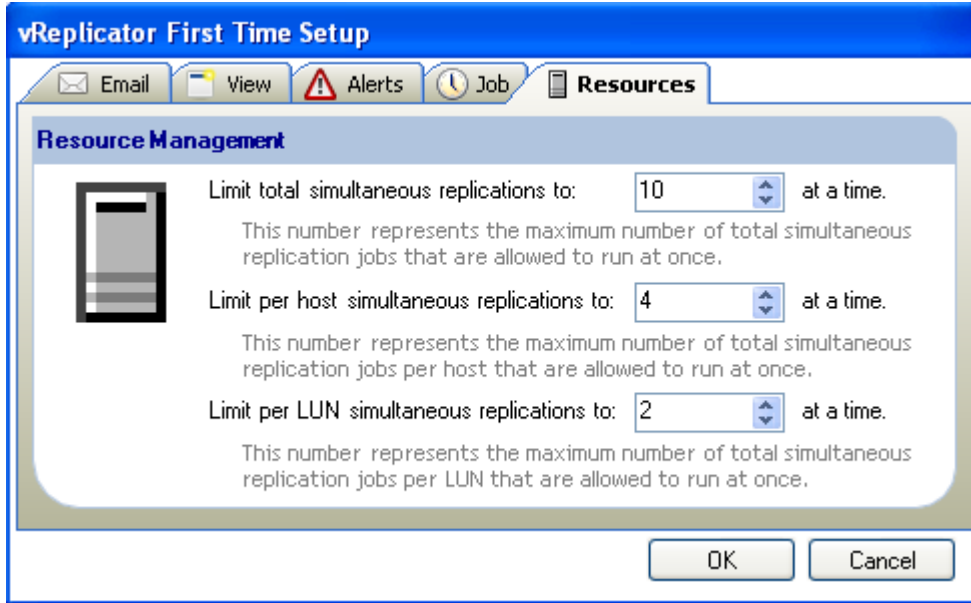
Default Job Frequency Help Window



Drag and Drop Replication Jobs Help Window



Resources Tab



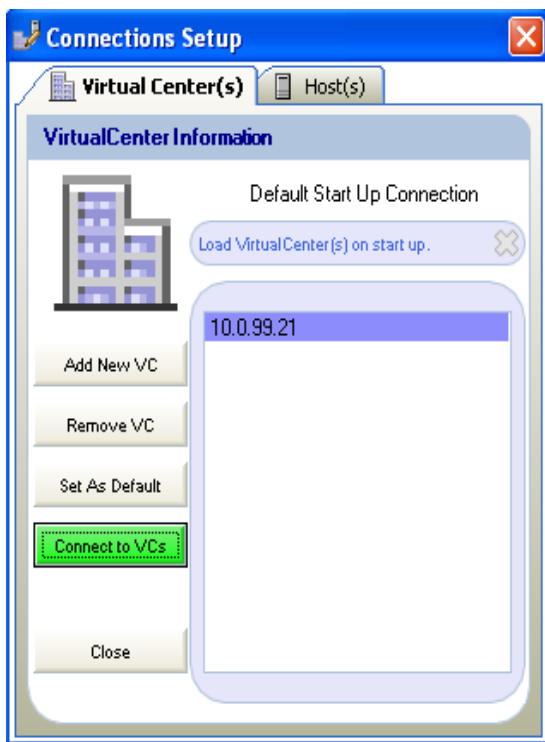
Limit total simultaneous replications to: _____ at a time. (spin box)	The value in this field indicates the maximum number of total simultaneous replication jobs that are allowed to run at once. A value between 1 and 100 is acceptable. Default is 10.
Limit per host simultaneous replications to: _____ at a time. (spin box)	The value in this field indicates the maximum number of total simultaneous replication jobs per host that are allowed to run at once. A value between 1 and 100 is acceptable. Default is 4.
Limit per LUN simultaneous replications to: _____ at a time. (spin box)	The value in this field indicates the maximum number of total simultaneous replication jobs per Logical Unit Number (LUN) that are allowed to run at once. A value between 1 and 100 is acceptable. Default is 2.

Connections Setup

After you define your settings on the First Time Setup dialog, you can add a VC or host, connect to it, or remove it through the Connection Setup dialog. You can also set a default VC or host to load automatically upon startup. If you skip the initial configuration process when you first access vReplicator, you can define these settings later through Connect on the Menu Bar of the vReplicator window. For instructions on configuring a VC or host, see Chapter 4.

VirtualCenter(s) Tab

In vReplicator, you must configure each VC that manages source or destination servers. That is, you must add each VC individually and connect to it.







<p>Default Start Up Connection</p>	<p>When vReplicator boots, it will automatically attempt to connect to configured VCs or hosts. vReplicator can only connect to one at a time—VCs or hosts—not to both simultaneously. This field indicates the default VC to which vReplicator will connect.</p> <p>You will know that the VC default has been set if this message displays below the field: Load VirtualCenter(s) on start up.</p>
<p>Configured VC List (text box)</p>	<p>Each VC that has been configured in this instance of vReplicator is listed in this text box.</p>

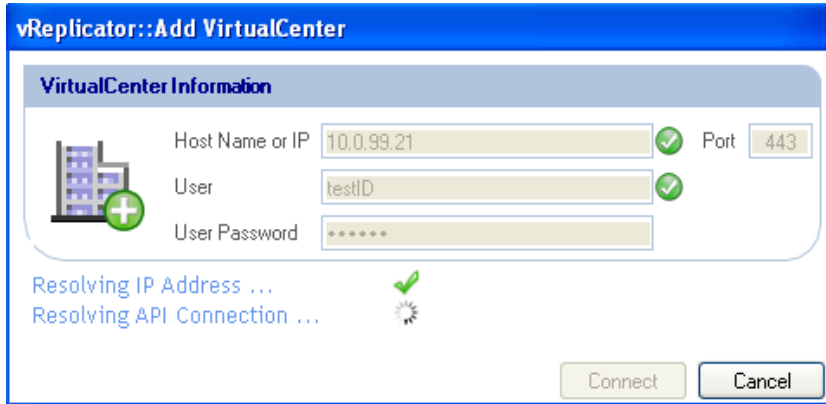
Add New VC	When you click this button, the Add VirtualCenter dialog displays. From this dialog, you can add a VC.
Remove VC	When you click this button, you can delete any VC that displays in the Configured VC List.
Set As Default	Sets the Default Start Up Connection to the selected VC.
Connect to VCs	Click this button to connect to any VC that displays on the Configured VC List. If vReplicator is connected to a host when you click this button, the host connection will be closed before vReplicator connects to the VC.

When you click Add New VC on the VirtualCenter(s) tab, the Add VirtualCenter dialog displays.

Add VirtualCenter Dialog

Host Name or IP	This field contains the host name or IP address of the server used to connect to the VC. The  icon adjacent to the field will change to a  icon when a valid value is entered in this field.
Port	The default value in this field is 443. The field is enabled, so you can change this value if, for example, you have configured your VC server to communicate through a different port.
User	This field should contain the ID of the user who is currently logged into vReplicator. The  icon adjacent to the field will change to a  icon when a valid ID is entered in this field.
User Password	This field should contain the password that corresponds to the ID entered in the User field.

When you click Connect on the Add VirtualCenter dialog, text displays in the lower-left to indicate progress in processing.



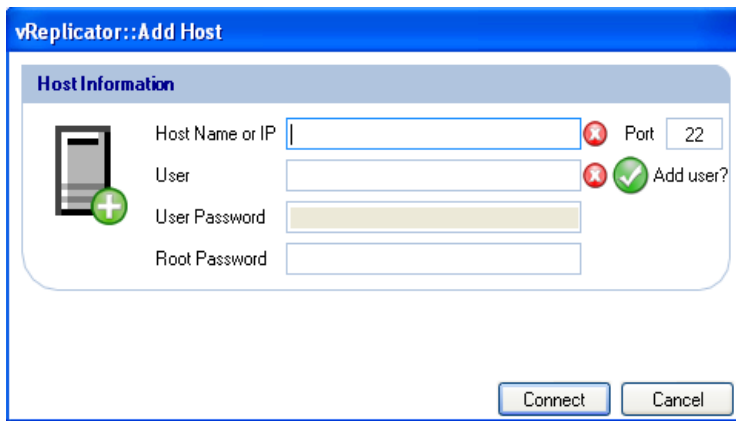
Host(s) Tab

You can configure hosts to connect directly to vReplicator. If you are not using VC, you must add and connect to each host that might serve as a source or destination.





Warning: If you connect to hosts directly, and a VM is moved through a vMotion event, you must initiate a new replication job for that VM. Otherwise, the VM will not replicate correctly.



Default Start Up Connection	<p>When vReplicator boots, it will automatically attempt to connect to any configured VCs or hosts. vReplicator can only connect to one at a time—VCs or hosts—not to both simultaneously. This field indicates the default host to which vReplicator will connect.</p> <p>You will know that the host default has been set if this message displays below the field: Load Host(s) on start up.</p>
Configured Host List (text box)	Each host that has been configured in this instance of vReplicator is listed in this text box.
Add New Host	When you click this button, the Add Host dialog displays. From this dialog, you can add a host.
Remove Host	When you click this button, you can remove any host that displays in the Configured Host List.
Set As Default	Sets the Default Start Up Connection to the selected host.
Connect to Hosts	Click this button to connect to any host that displays in the Configured Host List. If vReplicator is connected to a VC when you click this button, the VC connection will be closed before vReplicator connects to the host.
Enable vzBoost (checkmark button)	Select this checkmark button to improve write speeds to VMFS. When you enable vzBoost, a driver is installed on the ESX host. This driver is only active during a vReplicator write and can be removed without rebooting the server.
What is vzBoost? (link)	Click this link to access a window that contains a general definition of vzBoost.

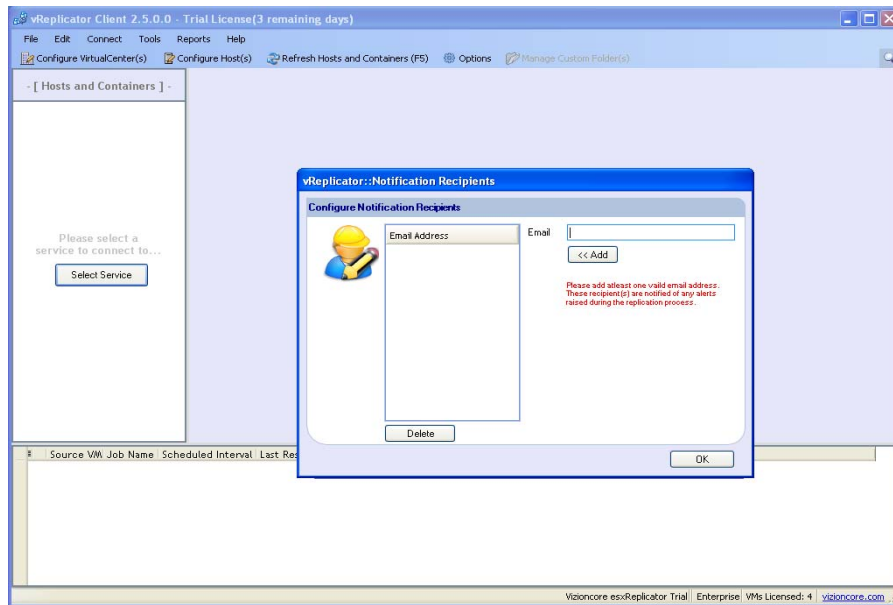


Add Host Dialog

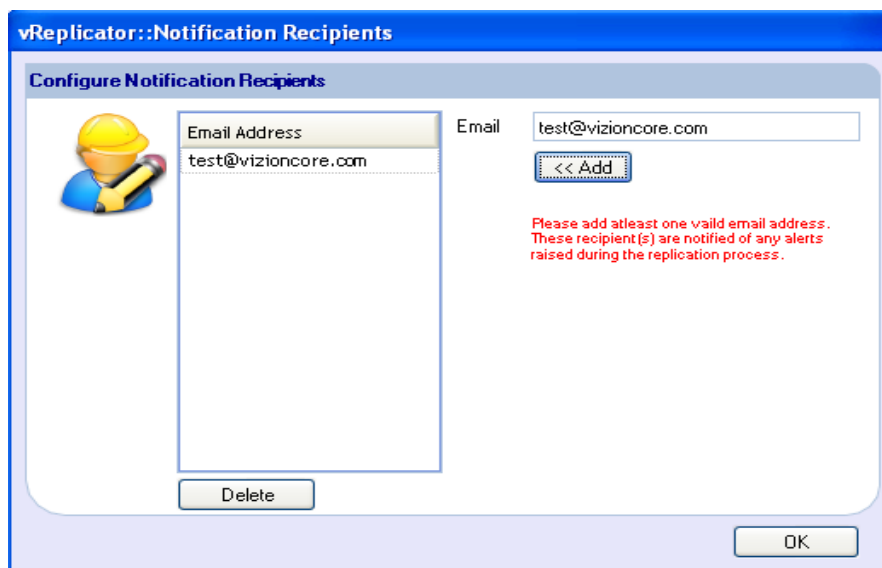
Host Name or IP	This field contains the host name or IP address of the server used to connect to the host. The  icon adjacent to the field will change to a  icon when a valid value is entered in this field.
Port	This is the SSH port on the host that will be used to communicate with vReplicator. The default value in this field is 22. The field is enabled, so you can change this value.
User	This field should contain the ID of the user who is currently logged into vReplicator. The  icon adjacent to the field will change to a  icon when a valid value is entered in this field.
Add user? (checkmark button)	This field, selected by default, is adjacent to the User field. Unless you clear this field, any ID entered in the User field will be added to the database. If you do not want an SSH user created with the credentials that you provided, it is best to clear this field.
User Password	In this field, enter the password that corresponds to the ID listed in the User field.
Root Password	Root user access to the host server is required to perform a replication. To gain root access to the host, vReplicator connects using another ID and then performs a switch user to the root account.

Configure vReplicator

1. Double-click the *vReplicator* icon on the desktop.
The vReplicator window and Notification Recipients dialog display.

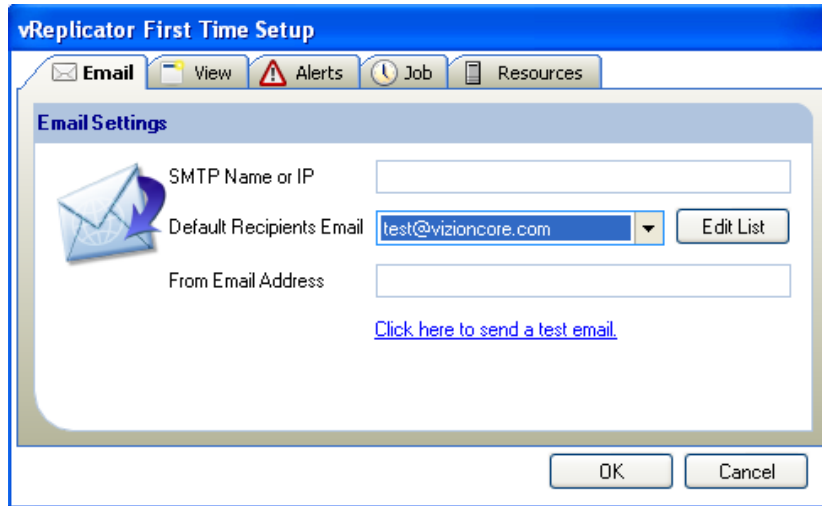


2. In the Email field on the Notification Recipients dialog, enter an email address.
Click **Add**.
The address is copied to the Email Address text box.

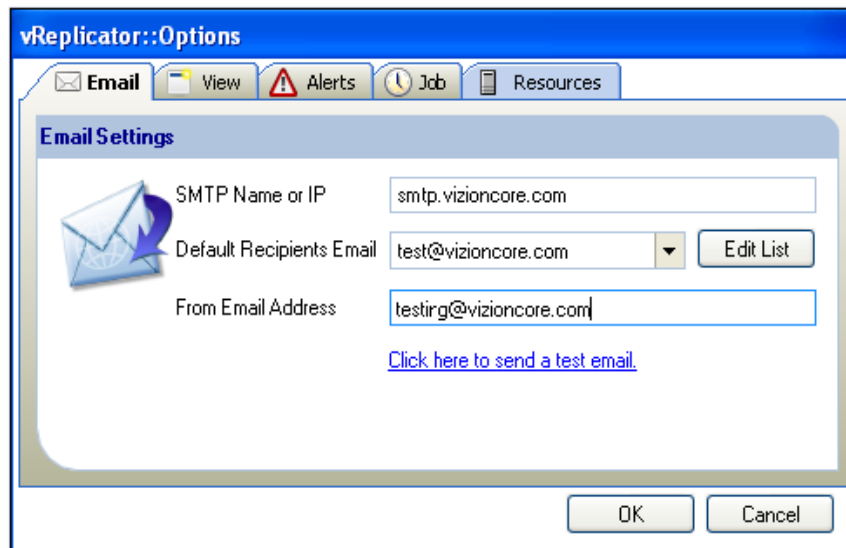


3. Clear the Email field.
4. Repeat steps 2 and 3 for every email address that you want to include. Then, click **OK**.

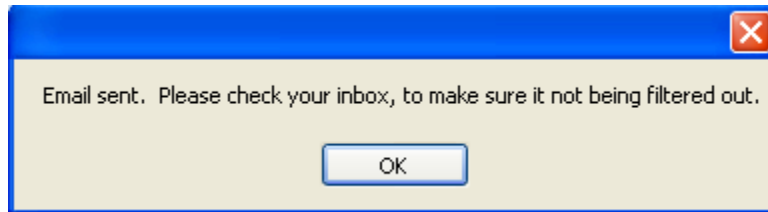
The First Time Setup dialog displays. The email addresses that you entered display in the Default Recipients Email field.



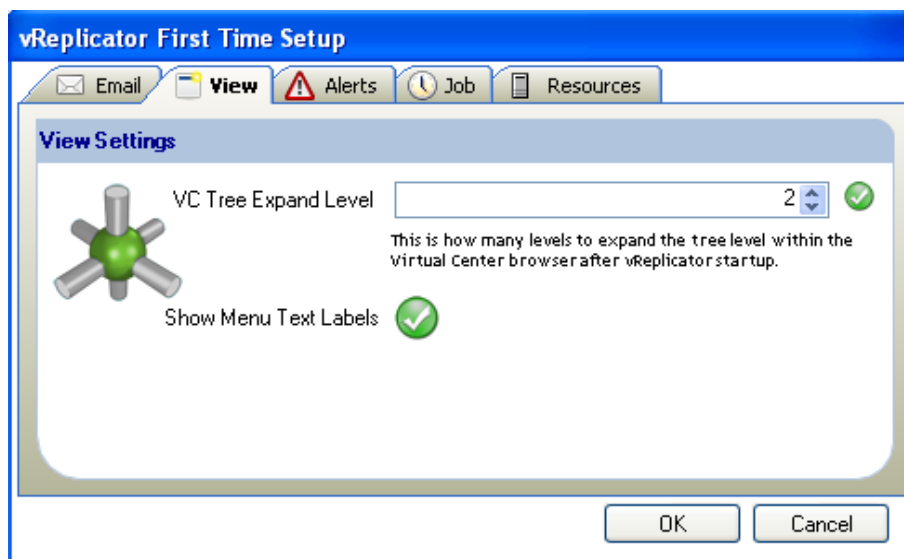
5. On the Email tab, populate these fields:
 - In the SMTP Name or IP field, enter the name or IP address of the mail server.
 - From the Default Recipients Email dropdown, select the address of the user who should be the default recipient.
 - In the From Email Address field, enter the address that should display in the From field on each notification.



6. Click the *Click here to send a test email* link.
A confirmation message displays.

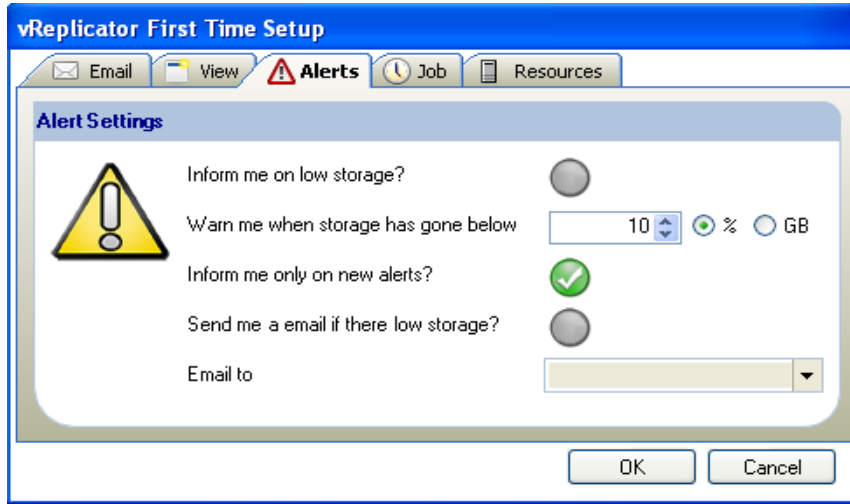


7. Click **OK**. Without closing the First Time Setup dialog, access the mailbox to which the email was sent. Confirm receipt of the test message.
8. On the First Time Setup dialog, click the View tab.
 - In the VC Tree Expand Level spin box, enter a value between 2 and 100 or leave the default (2) as is.
 - By default, the Show Menu Text Labels field is selected. Clear the field if you do not want the icon text labels to display in the Toolbar.




9. Click the Alerts tab.
 - Select the Inform me on low storage checkmark button if you want an alert to display in the Replication Management pane when storage is low.
 - In the Warn me when storage has gone below field, select % or **GB** and enter a numerical value in the adjacent spin box.
 - By default, the Inform me only on new alerts field is selected.
 - If you want notification alerts to be sent via email, select the Send me a email if there low storage checkmark button.
 - In the Email to dropdown, select the address to which the alerts should be sent.

Note: To enter a new address, click the Email tab and add the address before returning to the Alerts tab to select it.




10. Click the Job tab.

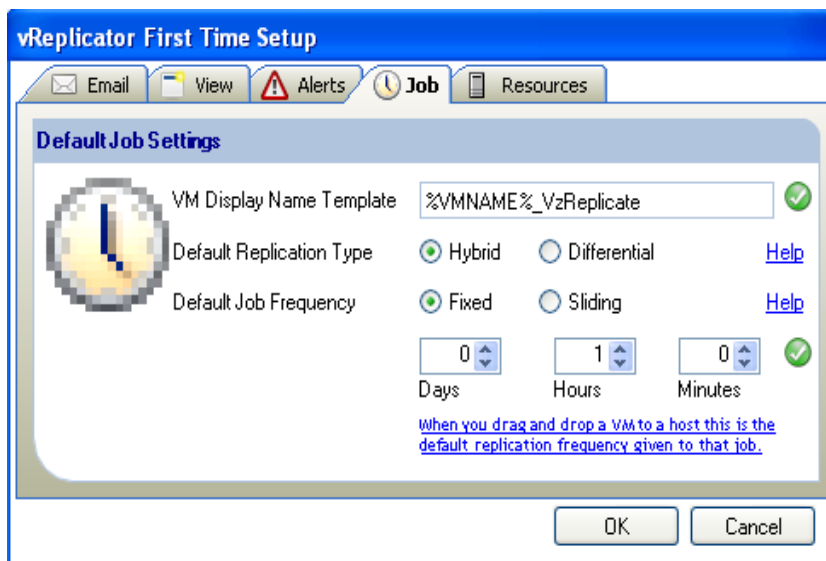
-By default, the VM DisplayName Template field is populated. Do not alter the %VMNAME% variable. You can alter _VzReplicate. The  icon remains displayed next to the field if the value is valid.

-In the Default Replication Type field, select a radio button—**Hybrid** or **Differential**.

-In the Default Job Frequency field, select a radio button—**Fixed** or **Sliding**.

-In the Days, Hours, and Minutes spin boxes, set the timeframe for the replication job.

A  icon displays next to the spin boxes if the values are valid.

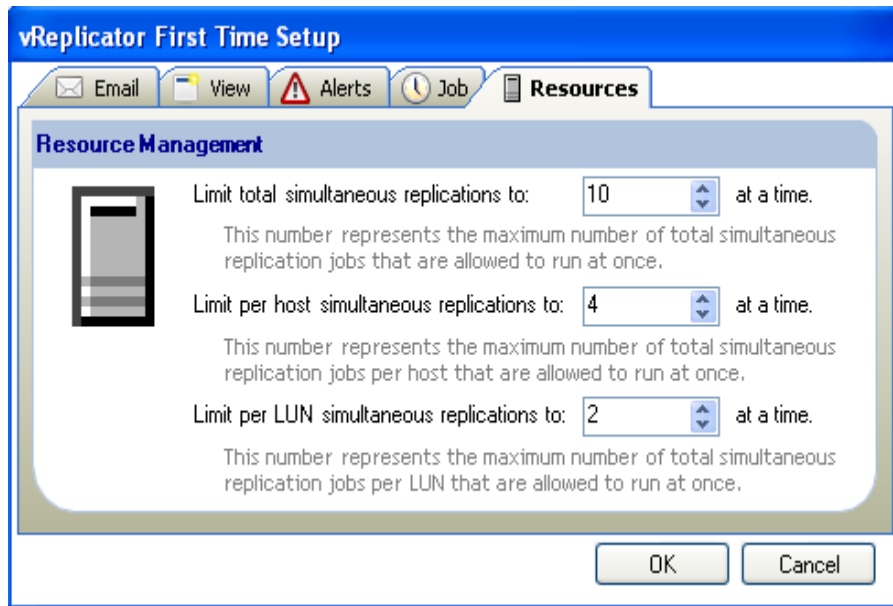


11. Click the Resources tab.

-In the Limit total simultaneous replications to _____ at a time field, use the spin boxes to define a limit or leave the default (10) as is.

-In the Limit per host simultaneous replications to _____ at a time field, use the spin boxes to define a limit or leave the default (4) as is.

-In the Limit per LUN simultaneous replications to _____ at a time field, use the spin boxes to define a limit or leave the default (2) as is.



12. Click **OK**.

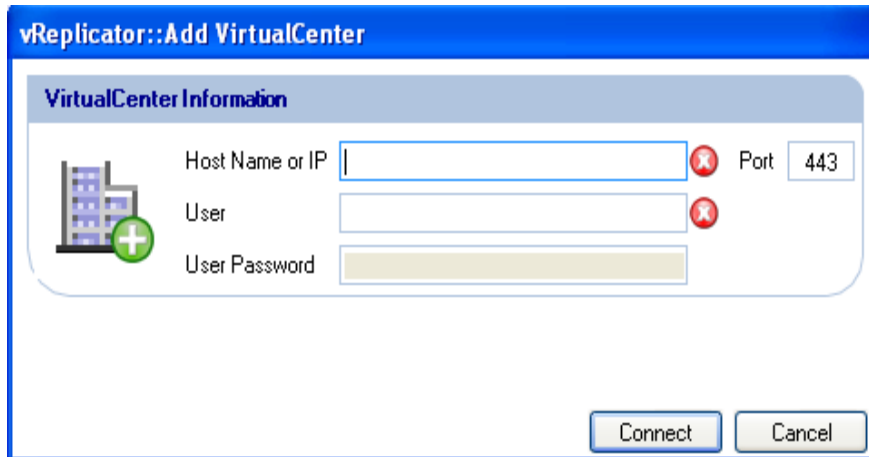
The Connections Setup dialog displays.

13. To add a VC and connect to it, continue in this sequence. To add a host and connect to it, proceed to step 20.



Warning: You can configure vReplicator to connect to both VCs and hosts, but you can only connect using one method at a time.

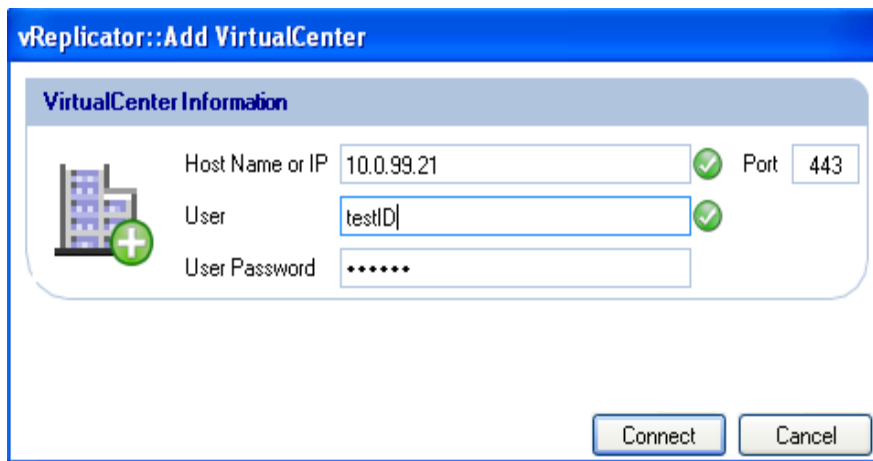
14. To connect to a VC: On the Virtual Center(s) tab, click **Add New VC**.

The Add VirtualCenter dialog displays.

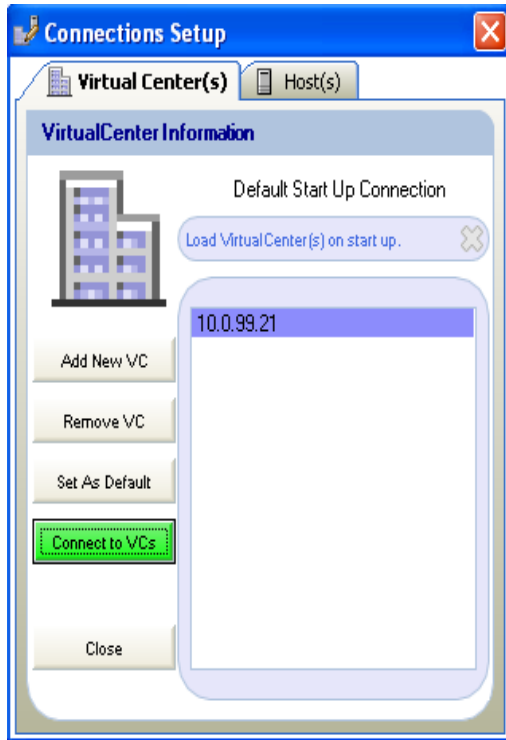


15. Enter a value in the Host Name or IP field. In the User and User Password fields, enter the account information for the user currently logged in.

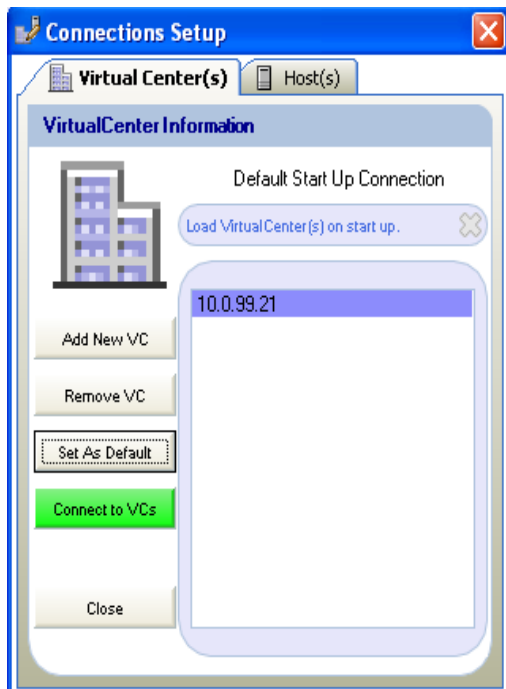
The  icons that display adjacent to these fields will change to  icons if the values are valid.



16. Leave the default value—443—in the Port field as is. Click **Connect**.
When processing is complete, the VC that you added displays in the Configured VC List on the VirtualCenter(s) tab.

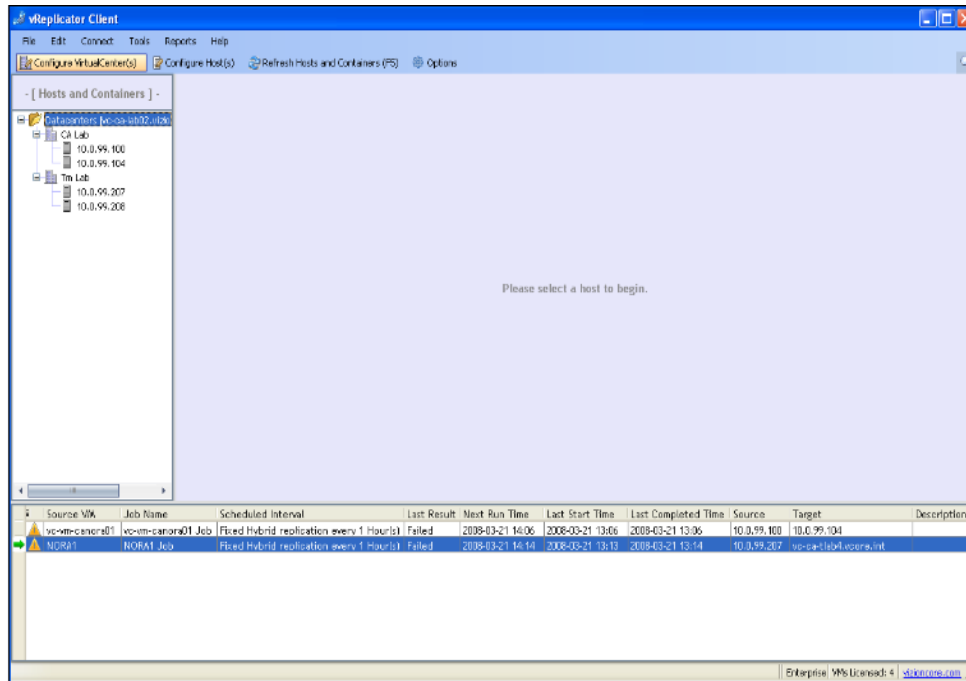


17. If you would like this VC to load upon startup, click **Set As Default**. The field label just above the text box changes to *Load VirtualCenter(s) on start up*.



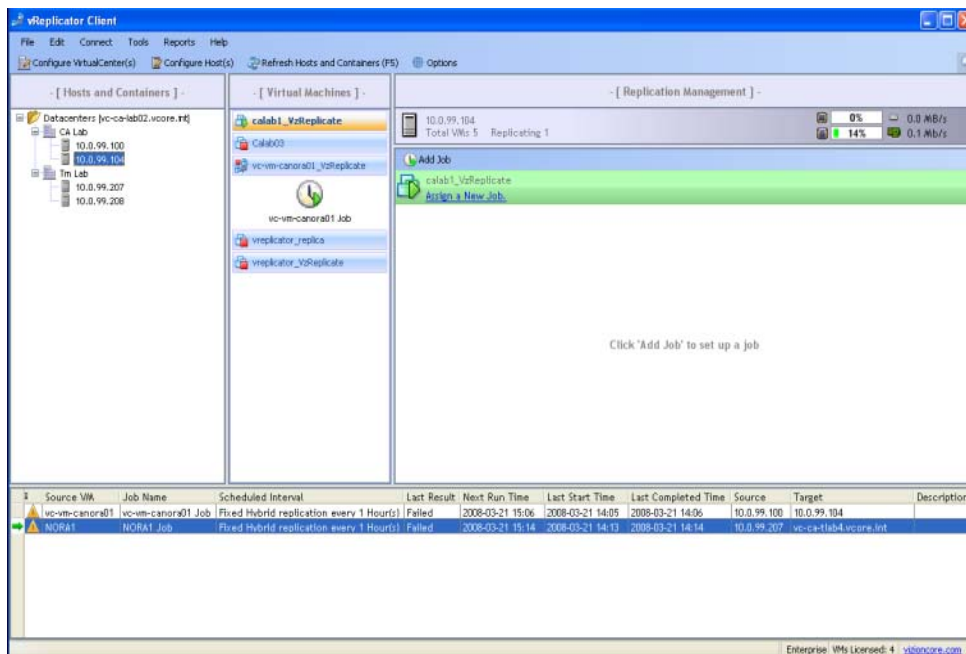
18. Click **Connect to VCs.**

The VC that you added displays in the Hosts and Containers pane.

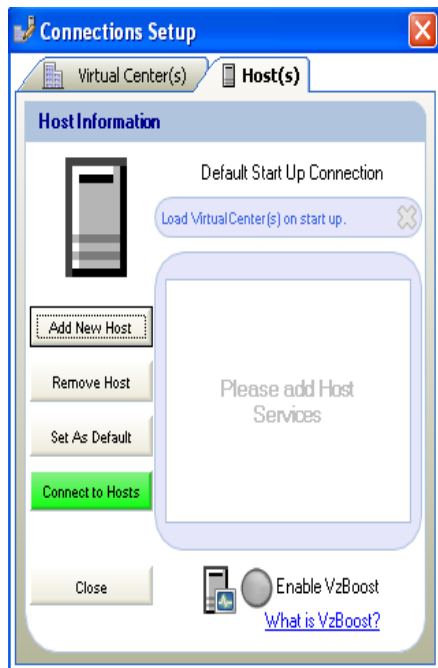


19. In the Hosts and Containers pane, click to highlight an object within the VC that you added.

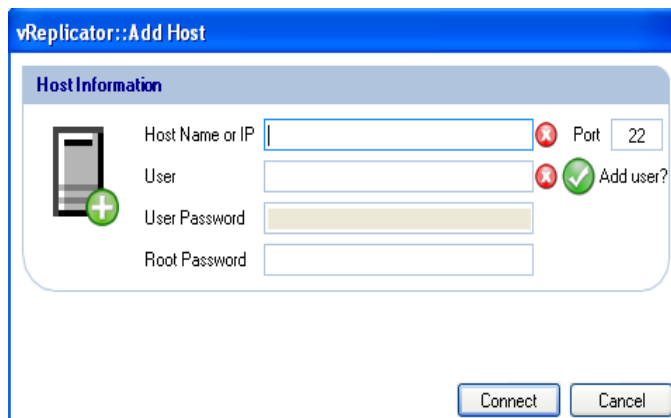
Data for that VC loads into the Virtual Machines and Replication Management panes.





20. To add a host and connect to it, click the Host(s) tab on the Connections Setup dialog.



21. Click **Add New Host**.
The Add Host dialog displays.

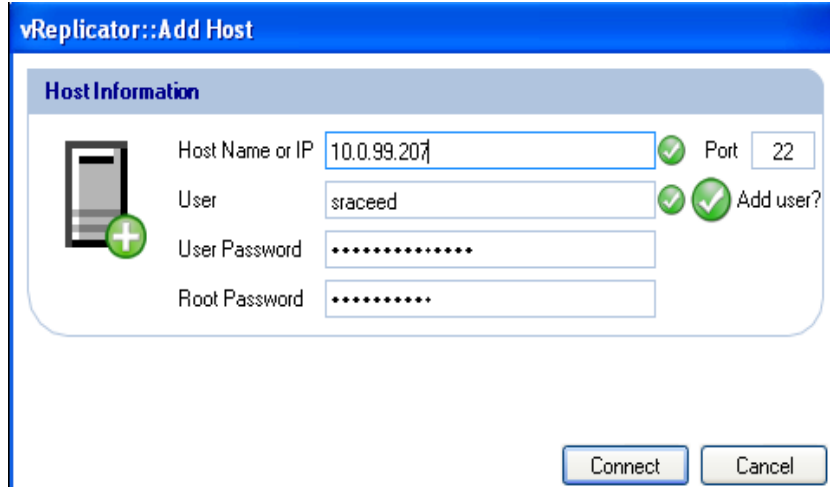


22. In the Host Name or IP field, enter a value. In the User field, enter the su ID.
Deselect the Add user checkmark button if you do not want this ID added to the database.

The  icons that display adjacent to these fields will change to  icons if the values are valid.

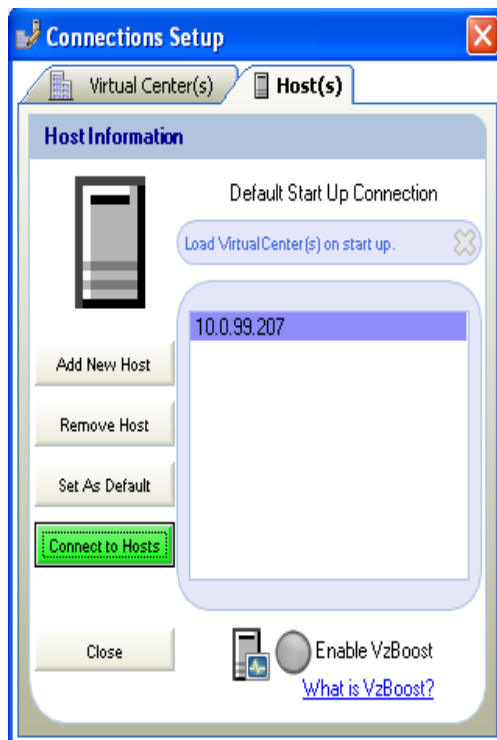
23. Leave the default (22) in the Port field as is.
24. In the User Password field, enter the password for the su ID.

25. In the Root Password field, enter the password for the root account.



26. Click **Connect**.

When processing is complete, the host that you added displays in the Configured Host List on the Host(s) tab.



27. To enable vzBoost, select the checkmark button of the same name.

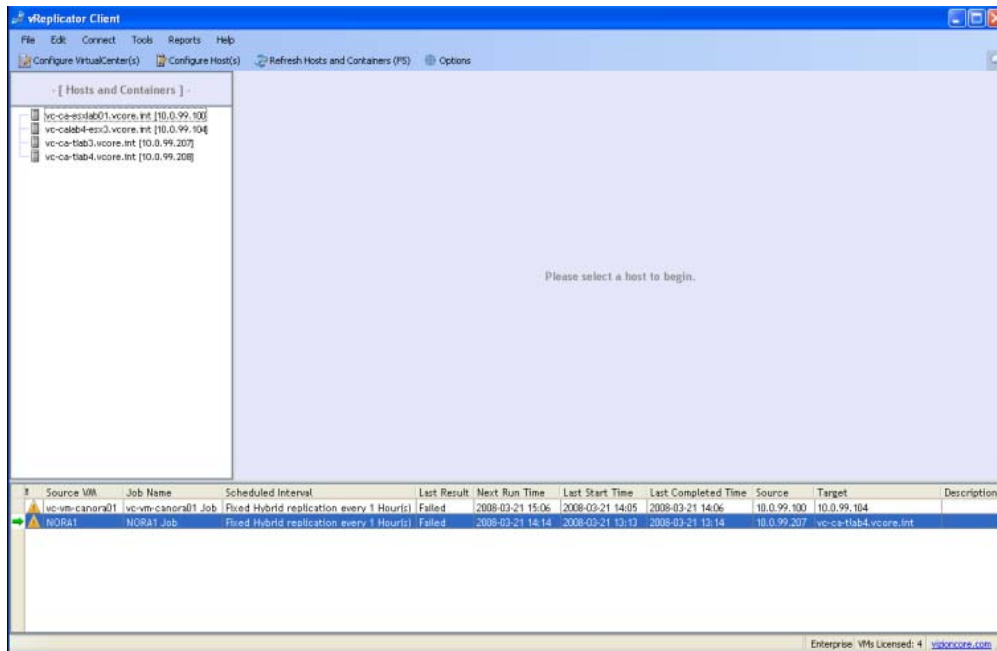
28. If you would like this host to load upon startup, click **Set As Default**.

The field label just above the text box changes to *Load Host(s) on start up*.

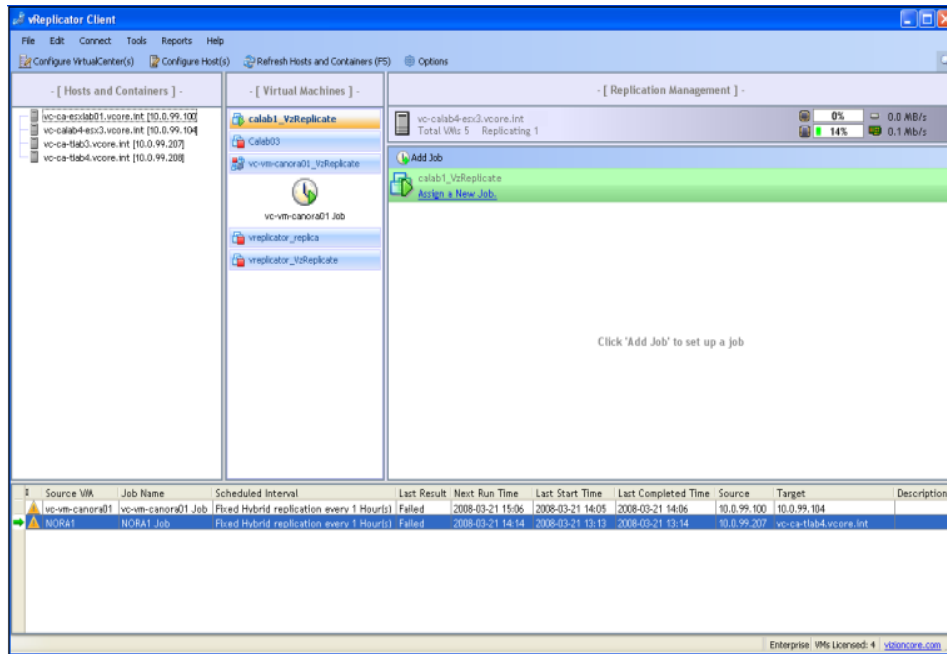


29. Click **Connect to Hosts**.

The host that you added displays in the Hosts and Containers pane of the vReplicator window.



- In the Hosts and Containers pane, click to highlight the host that you added. Data for that host loads into the Virtual Machines and Replication Management panes.

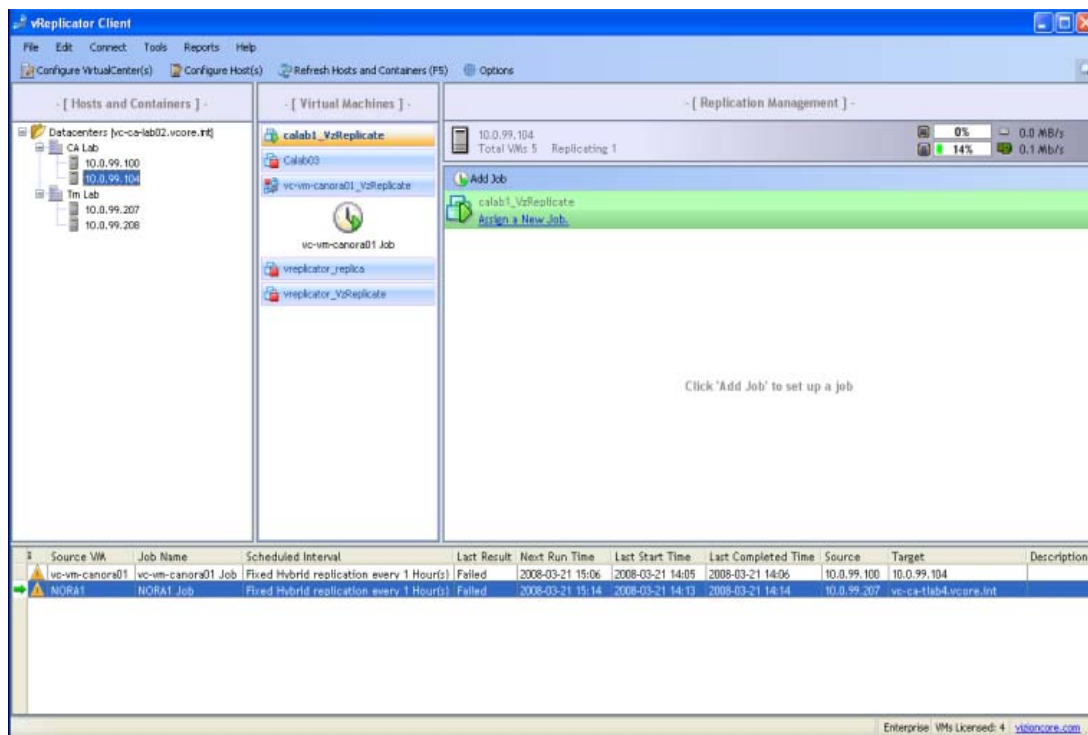


4 Using vReplicator

vReplicator User Interface

The vReplicator window is the central navigational area of the software. This is where you can view the components of the system, such as VCs, hosts, and VMs. It is through this window that you can access the commands that allow you to configure and execute replication jobs and monitor their progress. The vReplicator window features these areas:

- Menu Bar
- Toolbar
- Hosts and Containers Pane
- Virtual Machines Pane
- Replication Management Pane
- Replication Log
- Status Bar



Menu Bar

At the top of the vReplicator window there is a Menu Bar. The commands available through the Menu Bar are described below.

File Edit Connect Tools Reports Help

File Menu

Exit	Select this command to close the window and exit vReplicator.
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Edit Menu

Search	Opens a search window at the top of the Replication Management pane. Use this window to search for VMs, hosts, and VC objects.
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Connect Menu

to VC	Accesses the VirtualCenter(s) tab of the Connections Setup dialog. Use this dialog to add, configure, and connect to VCs.
to Host	Select this command to access the Host(s) tab of the Connections Setup dialog. On this tab you can add, configure, and connect to hosts.

Tools Menu

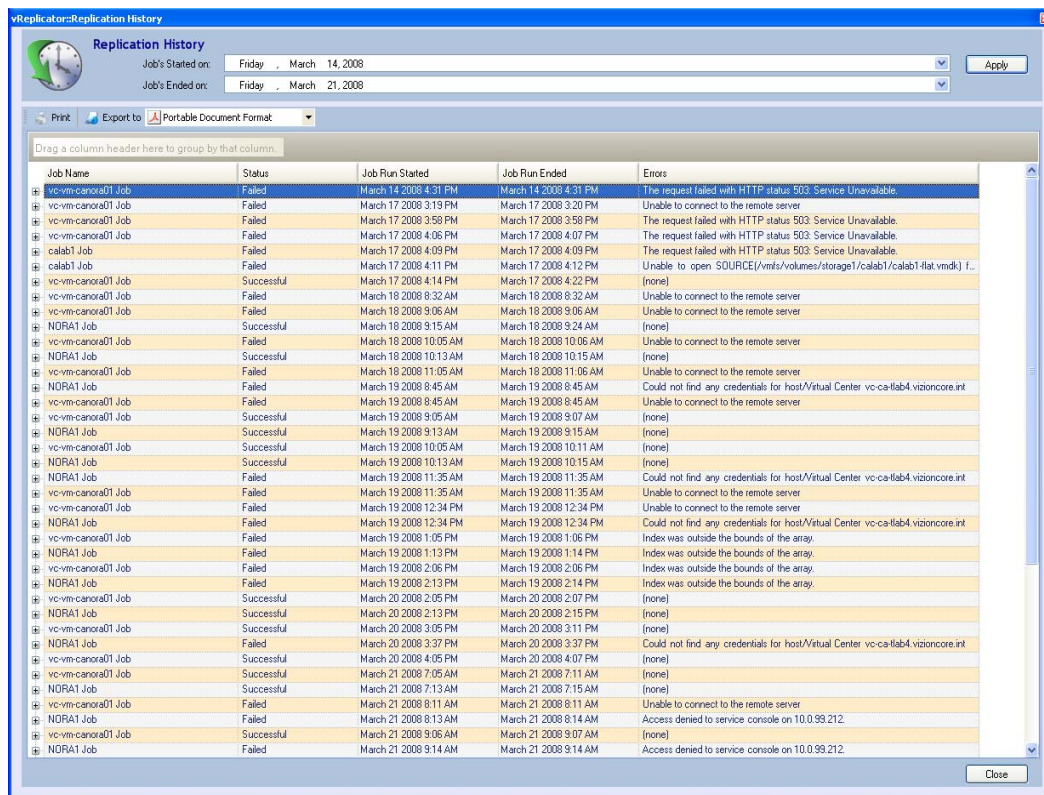
There is additional information about the Datastore Summary, Event Viewer, and VSS Options commands later in this chapter. You will find information about the Options dialog in the *First Time Setup* section in Chapter 2.

Datastore Summary	Use this command to access the Datastore Summary dialog, which features information about the datastores—hosts and VCs—configured in vReplicator. The data includes the total disk space available (in GB), the amount of free space (in GB), and the percentage of free space. You can make changes to the threshold level (in % or GB) and refresh the screen for a real-time update.
Event Viewer	Selecting Event Viewer from the Tools menu accesses the Event Viewer dialog, where you can monitor events using application, system, and security logs. You can complete administrative tasks as well—from customizing the view to exporting data.
VSS Options	The VSS Command accesses the VSS Summary window, which features these columns: Enabled, Host, VM Name, IP Address, Status, and Service. Use the fields on this dialog to install the Vizioncore VSS agent.

Options	Opens the Options window through which you can change notification and interface settings, configure alerts, and set job defaults and limits.
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Reports Menu

There is only one command in the Reports menu—Replication History. The Replication History window gives you access to general information about the replication jobs that have been run, both those that succeeded and failed. From this window, you can print reports as well as export data to Portable Document Format (PDF), Extensible Markup Language (XML), and MS Excel. There is additional information about reports later in this chapter.

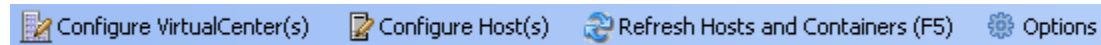


Help Menu





About	Displays data about vReplicator, including version number and licensing information.
Documentation	Provides a link to access the vReplicator User Manual on the Vizioncore site.

Toolbar

On the vReplicator window just below the Menu Bar there is a Toolbar. All Toolbar commands are described below. Some of them are duplicates of those found on the Menu Bar.








Note: You can configure vReplicator to display only icons—without text—in the Toolbar. To do this, clear the Show Menu Text Labels checkmark button on the View tab of the Options dialog.

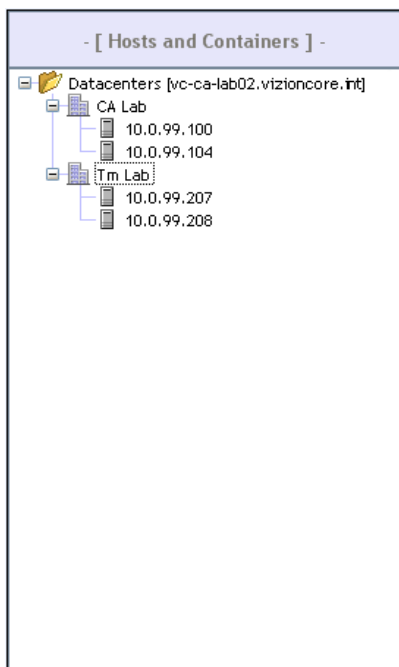
	Configure VirtualCenter(s): Accesses the VirtualCenter(s) tab of the Connections Setup dialog, from which you can add, delete, and connect to VCs. On this dialog, you can also set a default VC to load on start up.
	Configure Host(s): Accesses the Host(s) tab of the Connections Setup dialog, from which you can add, delete, and connect to hosts. On this dialog, you can set a default host to load when you access the software.
	Refresh Hosts and Containers (F5): When you click this icon, the entire vReplicator window refreshes.
	Options: Click this icon to access the Options dialog. Using the Email, View, Alerts, Job, and Resources tabs, you can configure interface settings, notifications, and alerts. In addition, you can define replication type, frequency, and limits for replication jobs.

Hosts and Containers Pane

On the left of the vReplicator window there is a Hosts and Containers pane. If you are not using VC, this pane displays all of the hosts to which you are connecting directly through your environment. If you are using VC, this pane features a tree structure that includes these objects:

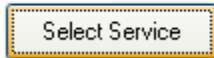
	Folder
	Expanded Folder
	Datacenter
	Cluster
	Host

All of the hosts whose VMs are available for replication are listed in this pane. Each node with a corresponding plus sign (+) can be expanded to display subfolders and other objects.



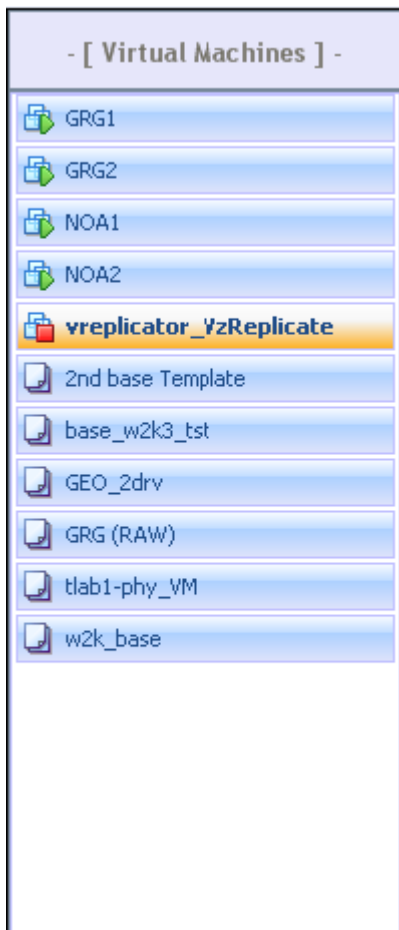
When you first access vReplicator, a Select Service button displays in the Hosts and Containers pane. Click it to open the Connections Setup dialog. Using the tabs on this dialog, you can connect to any VC or host that you configured. Once the connection is established, the Select Service button no longer displays.

Please select a server to connect to...



Virtual Machines Pane

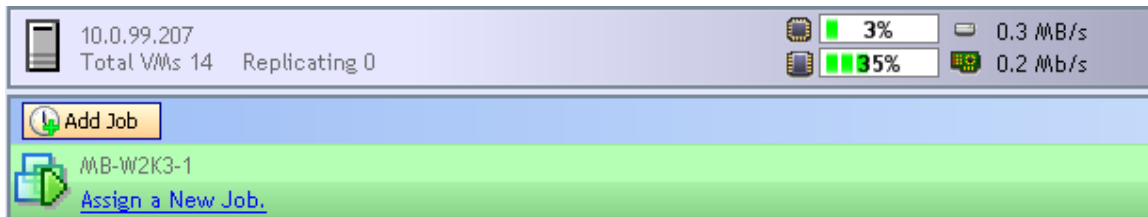
At the center of the vReplicator window there is a Virtual Machines pane. When you select a host in the Hosts and Containers pane, all of the VMs residing on that host display in the Virtual Machines pane. In addition, all of the available templates are listed. A VM that is running features a green arrow icon. A VM that is not running has a corresponding red box icon. You can replicate to or from any VM, whether or not it is running.





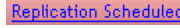
Replication Management Pane

On the right of the vReplicator window, there is a Replication Management pane. It features detailed information about replication jobs. During a replication, this pane displays a tree structure of tasks associated with the process. You can monitor replication jobs based on the progress bars that display for each task.

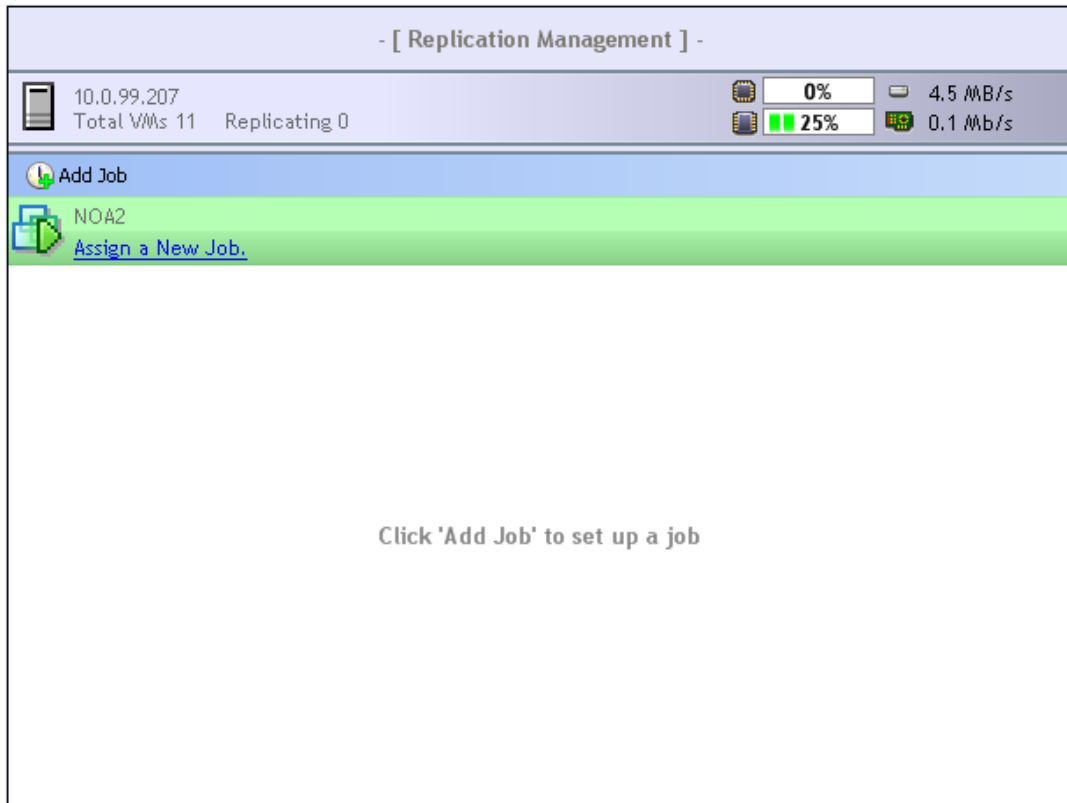
On the left side of the pane there is status information for the selected host, including host name, the number of VMs residing on the host, and the number of replication jobs currently running. On the right side, there are several icons that capture performance statistics for the host—CPU, memory, disk, and network usage. You can hover over these icons to identify them. In addition, there are two icons that correspond to VM activity (running and not running) and a button and link that you can use to initiate replication jobs. They are all described below.



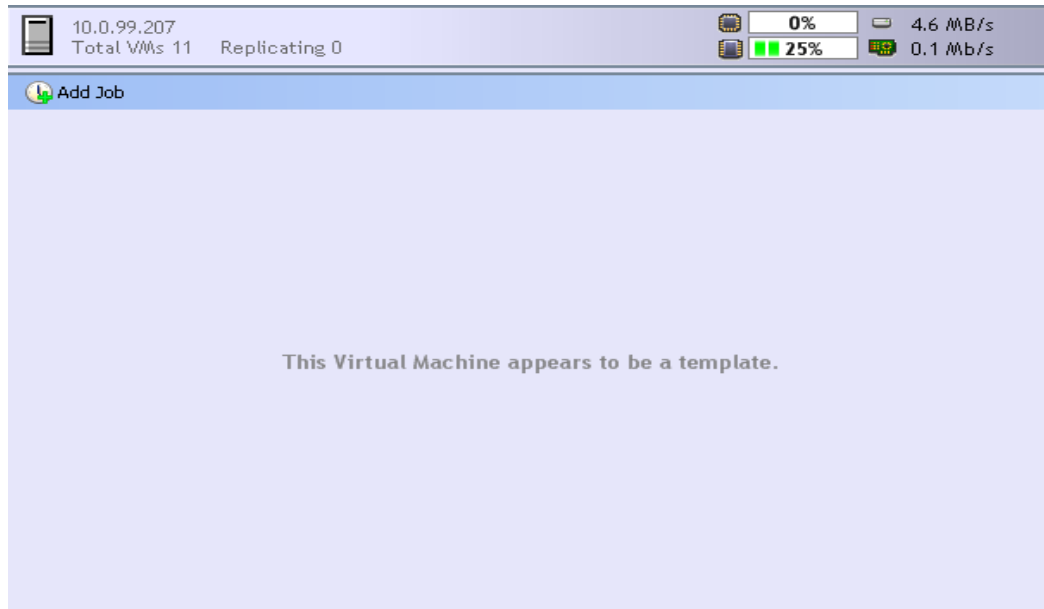
	<p>Service Console CPU Usage: Measured as a percentage of overall capacity, this value indicates CPU usage.</p>
	<p>Service Console Memory Usage: Measured as a percentage of overall capacity, this value indicates memory usage.</p>
	<p>Service Console Disk Usage: The value in this field indicates the disk usage in MBs.</p>
	<p>Service Console Network Usage: The value in this field indicates the network usage in Mbs.</p>
	<p>Click this button to access the Replication Job Wizard dialog to initiate a job.</p>
	<p>This icon displays next to a VM name. It indicates that the VM is running.</p>

	<p>This icon displays next to a VM name. It indicates that the VM is not running.</p>
	<p>Located below the Toolbar, this link accesses the Replication Job Wizard dialog, where you can initiate a replication job.</p>
	<p>This link displays below the Toolbar. Click it to access the Replication Job Wizard for the job that is currently displayed in the Replication Management pane.</p>

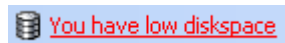
When you select a VM in the Virtual Machines pane, this view displays in the Replication Management pane:



When you select a template in the VMs pane, this view displays in the Replication Management pane:

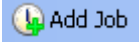


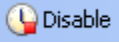

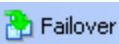
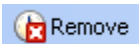


When disk space is low, an alert message displays in red on the right side of the vReplicator Management pane.





Replication Management Pane: Job Views

Before a replication starts, details about the job display in the Replication Management pane. Several additional icons display as well.

	<p>When you click this icon, the Replication Job Wizard dialog displays. Using this wizard, you can add a new replication job. vReplicator automatically assumes that the source machine is the VM currently selected in the VMs pane.</p>
	<p>This icon allows you to initiate a replication job at any time, even if the job is not scheduled to run. The job can complete even if the source and destination VMs are not running. When you click this icon, a message displays, asking you to confirm that you want to run the job now.</p>
	<p>When you click the Edit icon, the Replication Job Wizard dialog displays. It features all of the settings that were defined for the selected job. Using the wizard, you can make configuration changes to the job.</p>
	<p>If you want to stop a job from running but not delete it, use the Disable command. It suspends current activity and prevents future replication passes from running. This command must be executed prior to initiating Test Failover, Failover, and Remove.</p> <p>When you click Disable, this confirmation message displays: “Are you sure you would like to Disable this job? Disabling this job will remove any vReplicator snapshots.”</p>
	<p>Failover testing powers on the destination replica with the Network Interface Card (NIC) disabled to prevent conflicts. You can analyze the VM and then shut it off. On the next replication pass, changes to the destination VM are reverted. After you complete the DR test, you must enable the VM. When you click Test Failover, a message displays that instructs you to disable the job before proceeding.</p>
	<p>Initiating the Failover command brings up the destination VM in an operational state. A message displays, instructing you to disable the job before proceeding. A second message displays, offering you the option of synchronizing before failing over.</p>
	<p>When you use this command, you delete the job that currently displays in the Replication Management pane. When you click Remove, two messages display. The first instructs you to disable the job that you intend to delete. The second informs you that in removing the job, you delete all snapshots that were generated during previous runs.</p>

While a replication job is in process, job progress details display as well as two additional icons:

	<p>As an alternative to removing a job, you might decide to disable it instead. Doing this prevents current and future replications but allows you to retain the job. A confirmation message displays, indicating that if you disable the job, all snapshots that were generated during previous jobs will be removed.</p>
	<p>If you click this icon, the job will pause temporarily and this confirmation message will display: “Are you sure you want to stop this process? (Note: This procedure can take a few minutes.)”</p>

Replication Log

The lower horizontal pane of the vReplicator window is called the Replication Log. It features a complete list of all replication jobs, including summarized information on job progress. You can monitor multiple replication jobs easily through this pane. You can sort the data by clicking column headings. These columns are featured in the Replication Log:

Source VM	Job Name	Scheduled Interval	Last Result	Next Run Time	Last Start Time	Last Completed Time	Source	Target	Description
NORA2	repl_job_nm	Fixed Snapshot Rotation Every 30 Minute(s)	None	2008-03-10 13:40	Never	Never	10.0.99.207	10.0.99.208	replicate cha

Source VM	This is the name of the VM that is being replicated.
Job Name	This field is auto-populated with the value that you entered in the Name field of the Replication Job Wizard dialog.
Scheduled Interval	This field is auto-populated with the value that you entered in the Perform this job every field of the Replication Job Wizard dialog.
Last Result	This column contains status information about the last replication job completed. Statuses include Failed, Cancelled, Successful, and Unknown. If the replication job is running for the first time, <i>None</i> displays in this column.
Next Run Time	This field is auto-populated with the value that you entered in the Next Start Time field of the Replication Job Wizard dialog.
Last Start Time	This column features the date and time that the last replicated job was initiated. Format is yyyy-mm-dd hh:mm.
Last Completed Time	In this field, the date and time that the last replicated job was completed are listed. If the replication job is running for the first time, <i>Never</i> displays in this column. Format is yyyy-mm-dd hh:mm.

Source	The Source field contains the name of the host on which the source VM resides.
Target	This field is populated with the name of the host on which the destination VM resides.
Description	This field is auto-populated with the information that you entered in the Description field of the Replication Job Wizard dialog.

When a replication job is in process, the column headings in the Replication Log update. An additional column displays:

Source VM	Job Name	Scheduled Interval	Last Result	Job Progress	Next Run Time	Last Start Time	Last Completed Time	Source	Target	Description
NORA2	repl job nm	Fixed Snapshot Rotation Every 30 Minute(s)	Successful	Replicating	2008-03-10 14:10	2008-03-10 13:57	2008-03-10 13:51	10.0.99.207	10.0.99.208	replicate cha

Job Progress	The data in this field indicates the stage to which a replication job has progressed. Statuses include Failed, Queued, and Replicating.
--------------	---

Status Bar

Below the Replication Log there is a Status Bar. This area of the interface displays the type of license issued for that machine, the number of replication jobs (VMs) allowed by that license, and a link to the Vizioncore site.

Replication Job Wizard

Through the Replication Job Wizard dialog you can configure replication jobs by defining type, frequency, notifications, alerts, timeframes, source machines, and destination machines. Some of the defaults that you set during the initial configuration will populate the corresponding fields in this dialog. For each replication job that you initiate, you can leave the default settings in place or you can override them.

Replication Job Wizard
ReplicationJobWizard - Step 1 of 5 -
Please choose a name, description and when to perform this job.

Name:

Description:

Replication Type: Hybrid Differential [Help](#)

Perform this job every: Fixed Sliding [Help](#)

Days Hours Minutes
Must be greater than or equal to 15 minutes

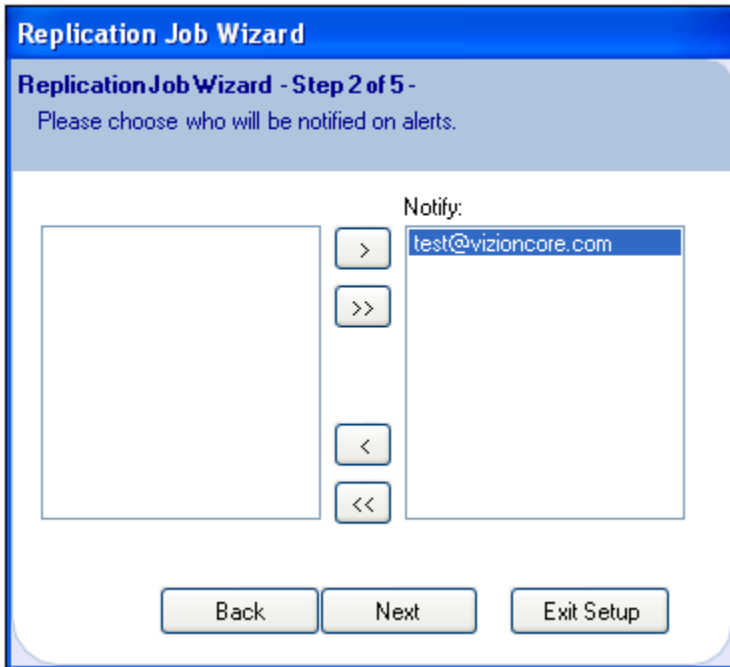
Next Start Time:

Next Start Date:

Replication Job Wizard Step 1

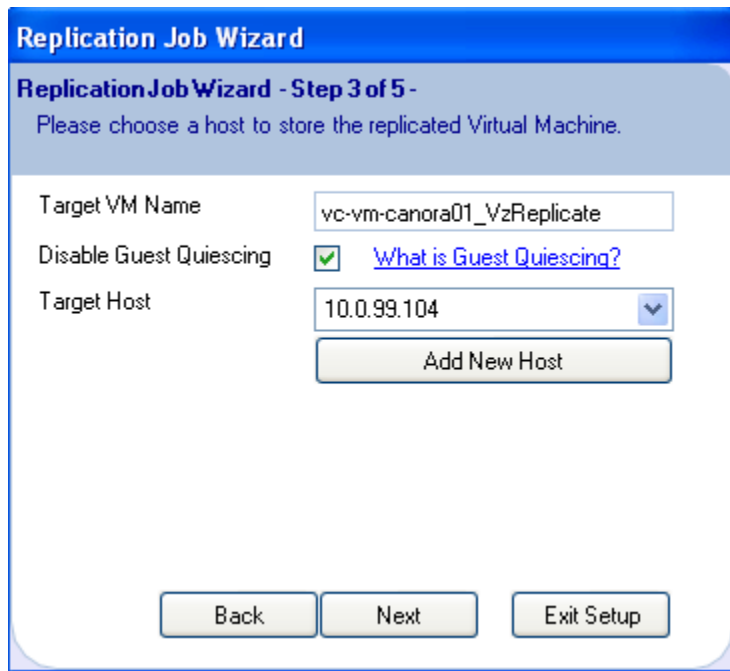
Name	This field is auto-populated with the name of the VM that you selected in the Virtual Machines pane, followed by the word <i>Job</i> . You can alter the value in this field.
Description	Populating this field makes it easier to distinguish between replication jobs. This description is included in email notifications for this job.

Replication Type (radio buttons)	<p>There are two replication types—Hybrid and Differential.</p> <p>Hybrid: A faster method of replication, hybrid replicates as a function of change over time. No scanning is needed and snapshots can be taken at shorter intervals. Using this method, a snapshot remains open continuously.</p> <p>Differential: Using this method, two replication passes are completed. The source VM's current data is compared to the changed data that is stored on the data map. These changes are replicated block by block and committed to the destination machine. During differential replication, a snapshot is left open only during a replication pass.</p>
Perform this job every (radio buttons)	<p>Fixed replication refers to jobs that are executed at specified points on a timeline.</p> <p>Sliding replication refers to jobs that are executed at a sliding frequency.</p> <p>Use the Days, Hours, and Minutes spin boxes to set a timeframe for the job. These values refer to the period between replications. The shorter the timeframe, the more up-to-date the VM will be as a result of the replication. A shorter timeframe requires more host resources, which can compromise VM performance temporarily.</p> <p>Note: The replication job will start automatically as soon as the initial copying completes.</p>
Next Start Time (spin box)	Refers to the time that the replication job will begin.
Next Start Date (dropdown)	Refers to the date that the replication job will begin.
Exit Setup	Click this button to cancel the replication job and close the wizard.



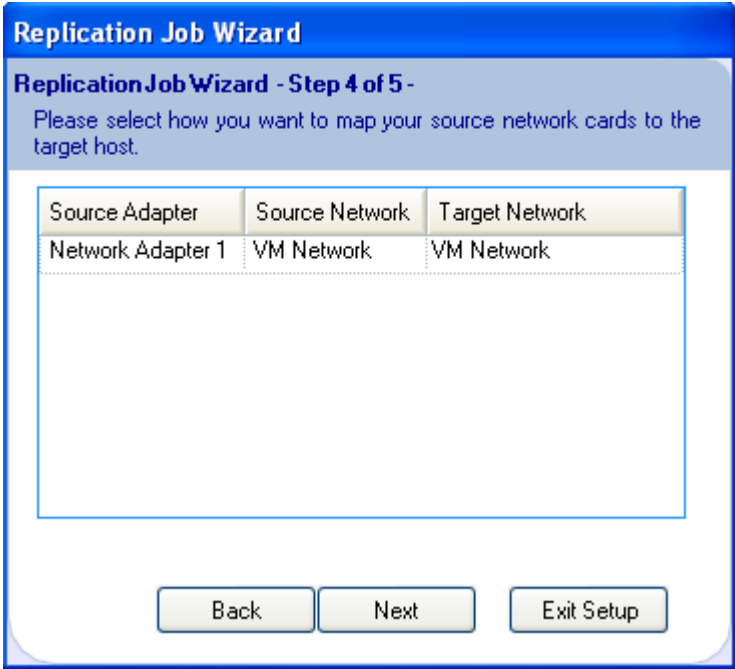
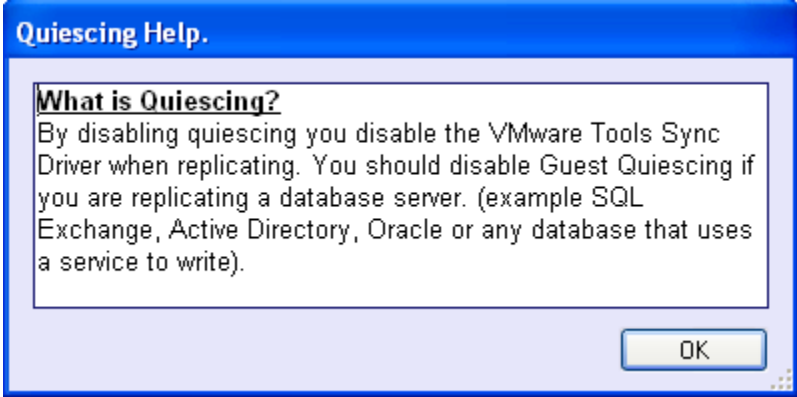
Replication Job Wizard Step 2

Unlabeled (text box)	This text box is populated with the email addresses that were added through the Email tab on the Options dialog. Any address that is displayed in this text box can be moved to the Notify text box for individual jobs. This field is disabled.
Notify list (text box)	This text box contains the default email address that was added to vReplicator during initial configuration.



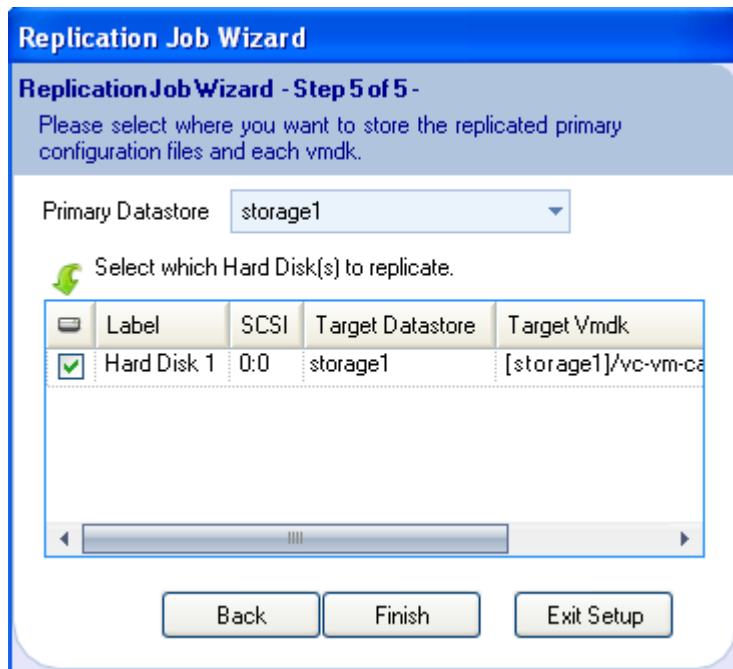
Replication Job Wizard Step 3

Target VM Name	This field is auto-populated with: (source VM name)_VzReplicate.
Disable Guest Quiescing (checkbox)	Quiescing pauses or alters running processes during replication to ensure consistency in results. When you disable quiescing, the VMware Tools Sync driver is disabled during replication. It is important to do this when you replicate a database server that uses a service to write. This includes SQL Exchange, Active Directory, and Oracle. Selected by default.
What is Guest Quiescing? (link)	Click this link to access a help file that clarifies when you should disable quiescing.
Target Host (dropdown)	This field is auto-populated with the names of each host available to be the destination for this replication job.
Add New Host	Click this button to initiate the process of adding a new host to vReplicator. Opens the Add Host dialog.



Replication Job Wizard Step 4

Source Adapter	The virtualized NIC adapter configured for the VM.
Source Network	Virtualized network for the source VM.
Target Network	Virtualized network for the destination VM. Right-click this column to select another value.



Replication Job Wizard Step 5

<p>Primary Datastore (dropdown)</p>	<p>This field is auto-populated with data from the ESX host. This dropdown includes the following information about the primary datastore listed:</p> <p>Datastore Name: The name of the primary target datastore is listed in this column.</p> <p>Total Space: The total amount of space (in GB) that the target datastore requires.</p> <p>Free Space: The total amount of free space remaining (in GB) on the target disk destination.</p>
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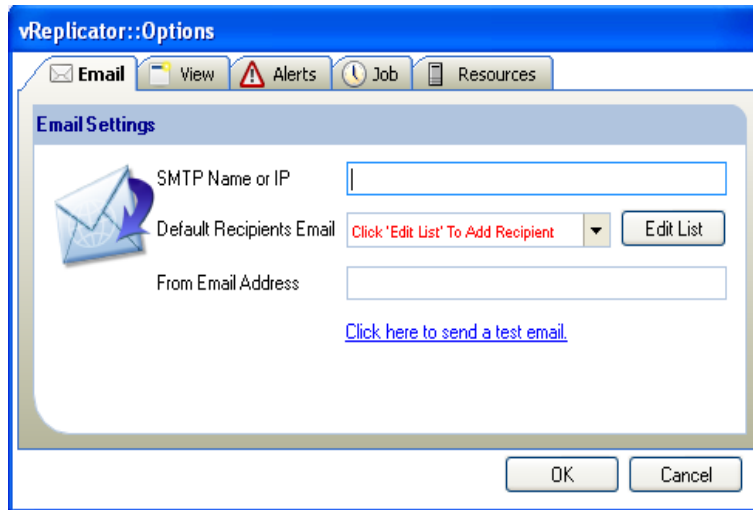
<p>Unlabeled (text box)</p>	<p>This text box features information from the ESX host, including a list of hard disks contained in the primary datastore. When you click within the source VM's Primary Datastore dropdown, these columns display: DataStore Name, TotalSpace, and FreeSpace.</p> <p>When you select a value from the Primary Datastore dropdown, the text box populates. The following data is featured in columns within the text box:</p> <p>Checkbox selection column: Select a checkbox that corresponds to a physical disk. Each disk contains target VMDKs.</p> <p>Label: This is a disabled field. Refers to the name given to the physical disk.</p> <p>SCSI: This is a disabled field. Refers to the Small Computer System Interface (SCSI) that corresponds to the physical disk.</p> <p>Target Datastore: This field is enabled. You can select a destination datastore from this dropdown.</p> <p>Target Vmdk: This is a disabled field. Click on this dropdown and these columns display: DataStore Name, TotalSpace, and FreeSpace.</p>
-----------------------------	--

Email Notification

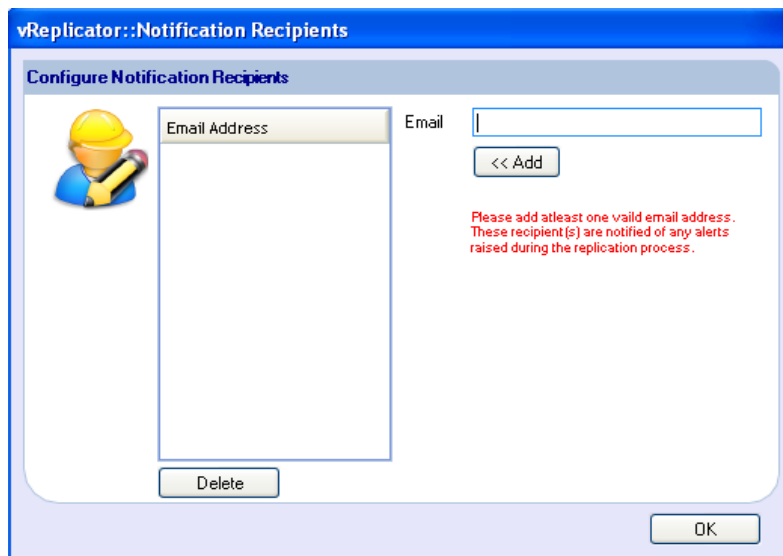
Add a Notification Recipient

If you bypassed email notification setup when you first configured vReplicator, you can complete the process by following the instructions below.

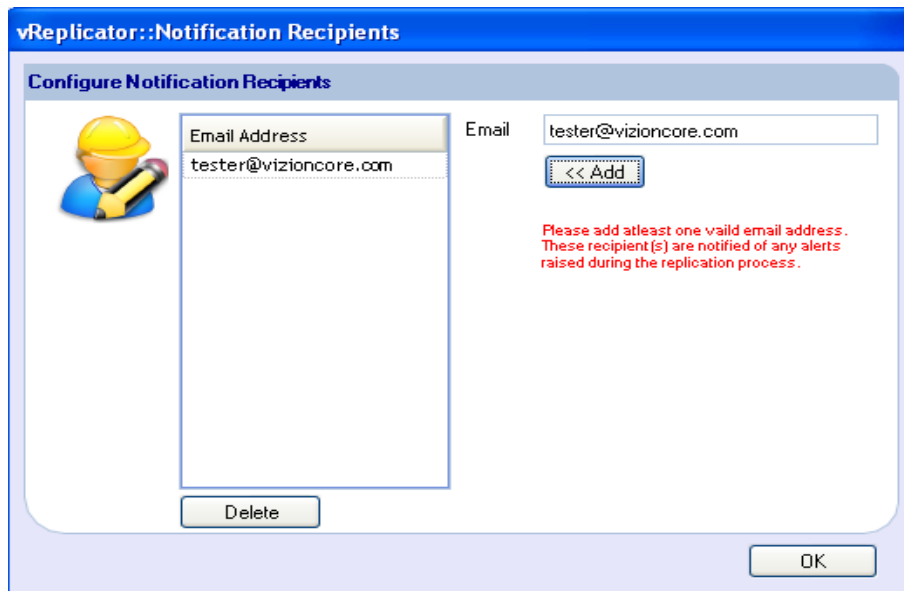
1. In the Toolbar on the vReplicator window, click **Options**.
The Options dialog displays.



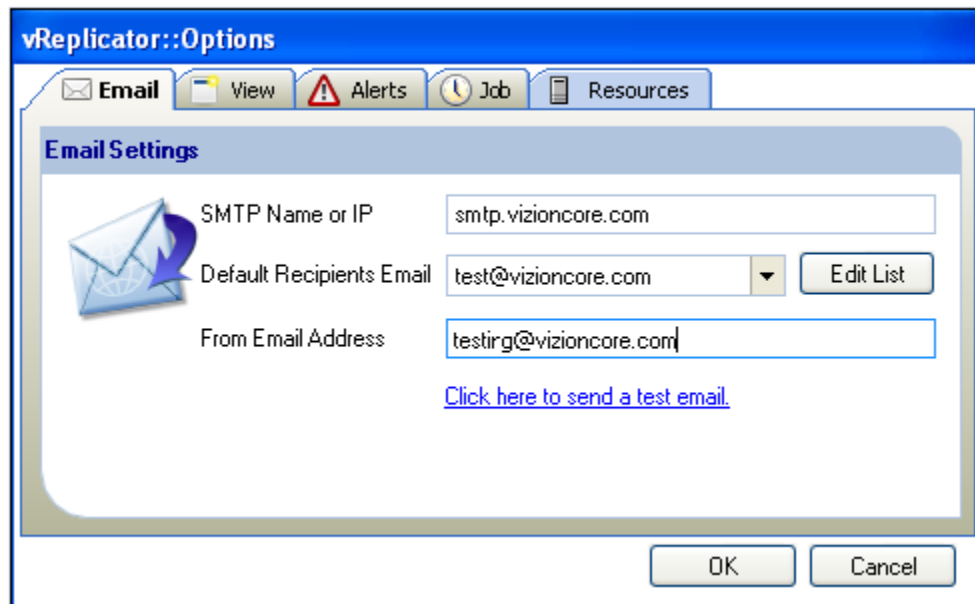
2. On the Email tab, populate the SMTP Name or IP field.
3. Click **Edit List**.
The Notification Recipients dialog displays.



- In the Email field, enter the email address for the user who should receive notifications. Click **Add**.
The email address is copied to the Email Address text box.

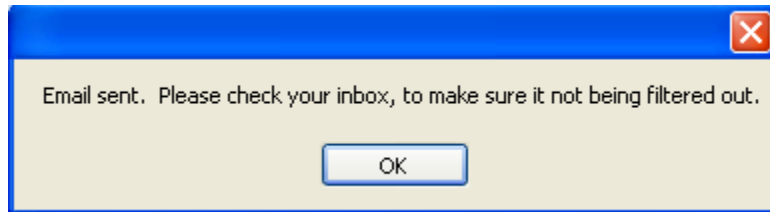


- To enter additional addresses, clear the Email field and repeat step 4. Click **OK**.
The Options dialog displays. The email addresses that you entered populate the Default Recipients Email field on the Options dialog.



6. Use the *Click here to send a test email* link to test transmission to each address that you entered.

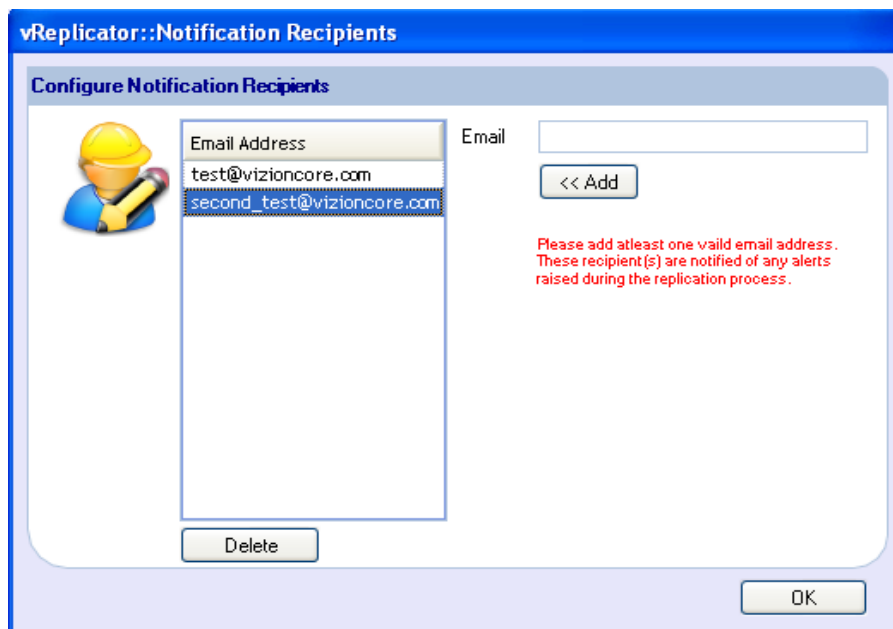
A confirmation message displays, requesting that you check the inbox for the email address.



Remove Email Address

You can delete email addresses at any time. However, at least one address must remain in the system at all times.

1. Access the Notification Recipients dialog. In the Email Address text field, click to highlight the address that you want to delete. Click **Delete**. The email address is deleted.

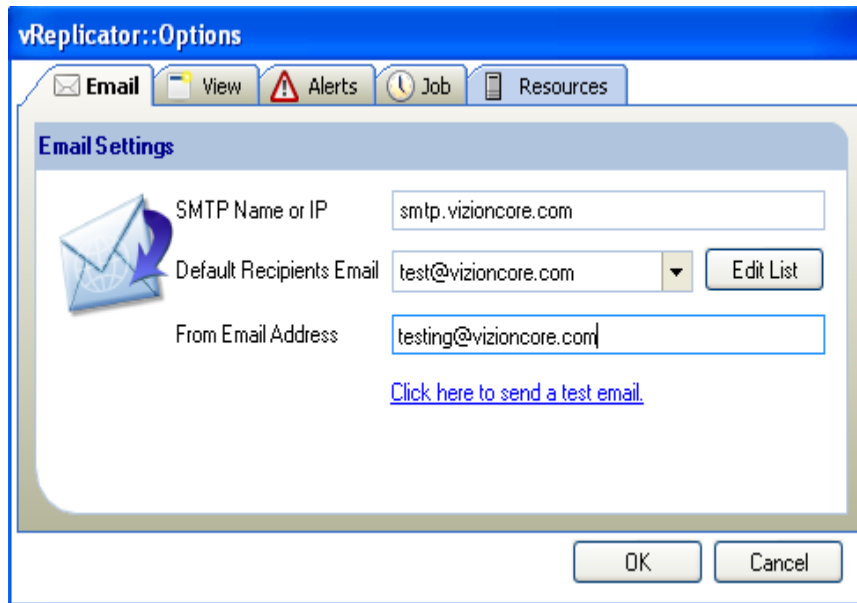


2. Click **OK** to close the dialog.

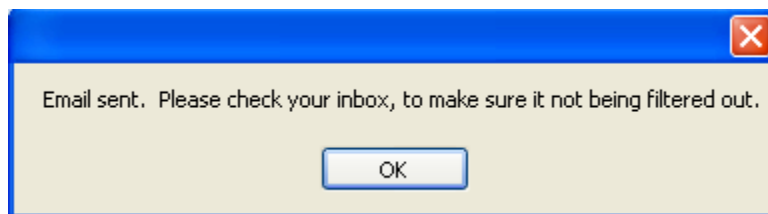
Test Email Notification

On the Email tab of the vReplicator First Time Setup/Options dialog, there is a link that allows you to test notification.

1. In the Toolbar on the vReplicator window, click **Options**.
The Options dialog displays.



2. On the Email tab, select an address from the Default Recipients Email dropdown.
3. Click the *Click here to send a test email* link.
A confirmation message displays.



4. Click **OK** to the message. Access the email inbox of the recipient. Confirm receipt of the email with “Test email from vReplicator” in the Subject and text similar to this:

This is a test email from vReplicator. If you are receiving this, then you have correctly set up your notifications by email.

VC and Host Configuration

If you did not configure VCs and hosts when you first accessed vReplicator, you can do so now. Both hosts and VCs can be configured, but you can only connect using one method at a time.

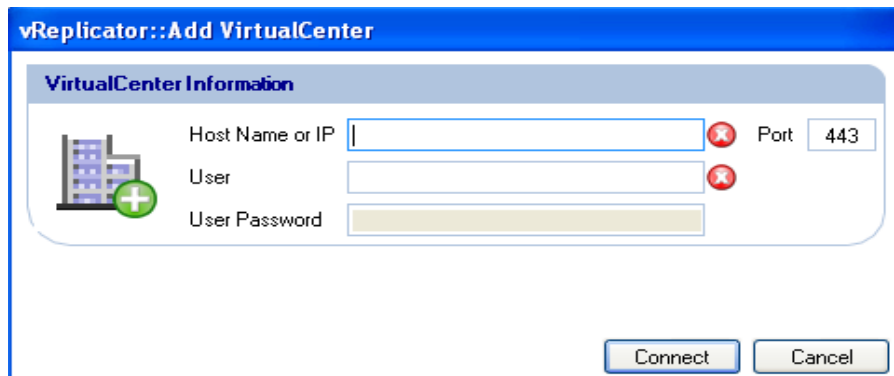
Configure a VC

1. In the Hosts and Containers pane, click **Select Service**.

OR

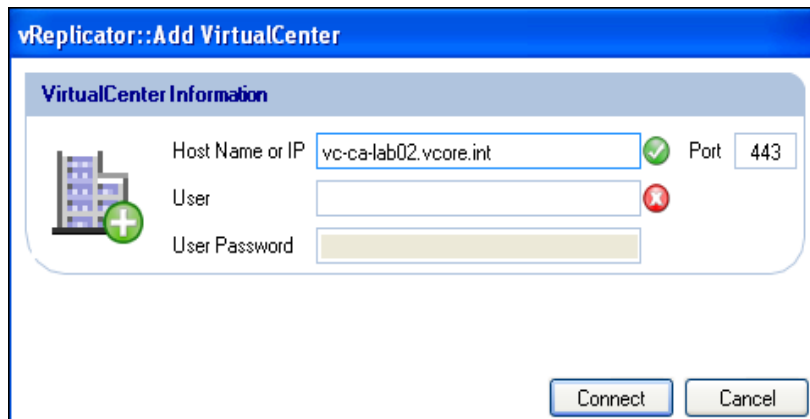
Click the *Configure VirtualCenter(s)* icon in the Toolbar.
The Connections Setup dialog displays.



2. Click **Add New VC**.
The Add VirtualCenter dialog displays.

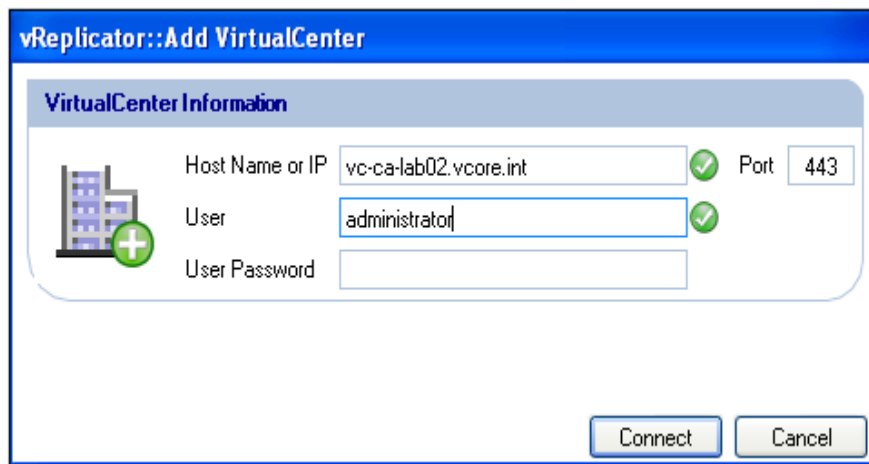


3. In the Host Name or IP field, enter the host name or IP of the server used to connect to the VC.

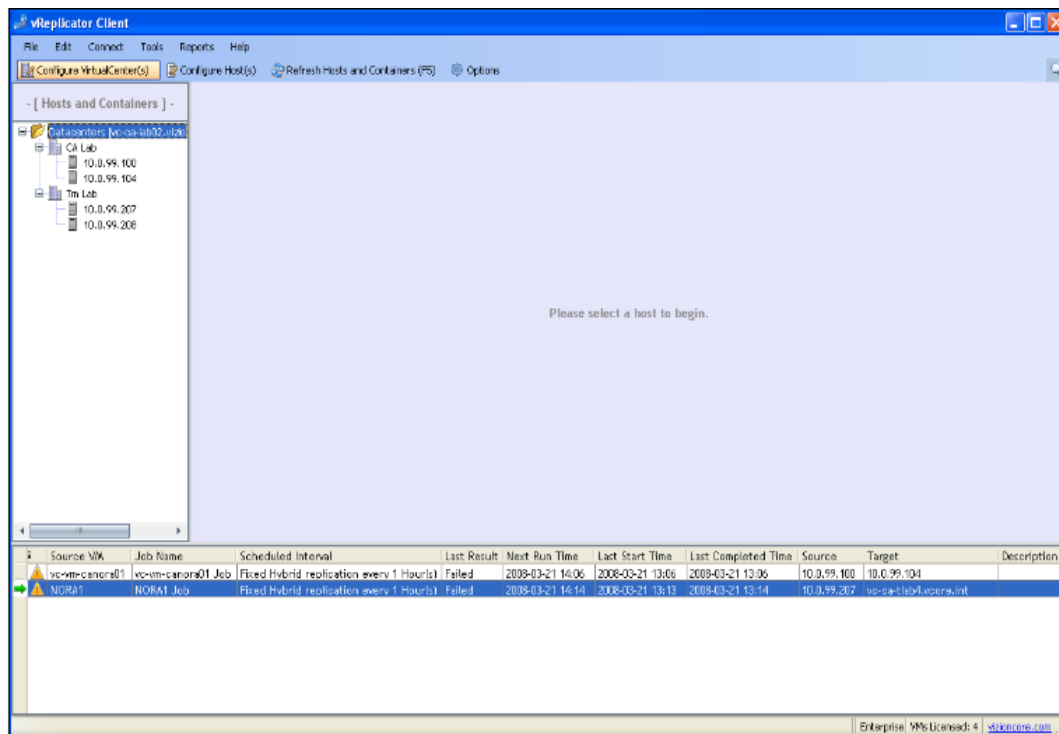
If the value you entered is valid, the  icon changes to .



4. Leave the Value (443) in the Port field as is. In the User field, enter the SA ID. If the value you entered is valid, the  icon changes to .

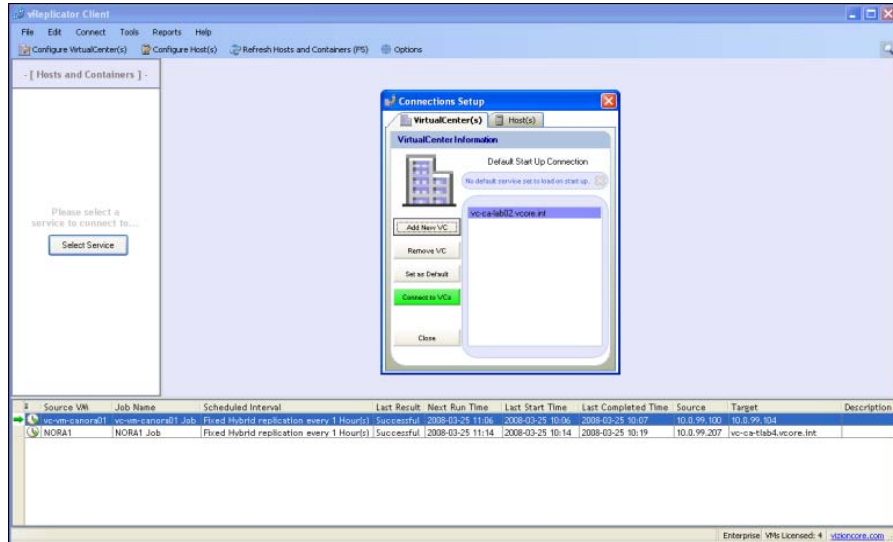


5. In the User Password field, enter the SA password. Click **Connect**. The VC displays in the text box on the VirtualCenter(s) tab.
6. On the Connections Setup dialog, click **Connect to VCs**. The VC displays in the Hosts and Containers pane.

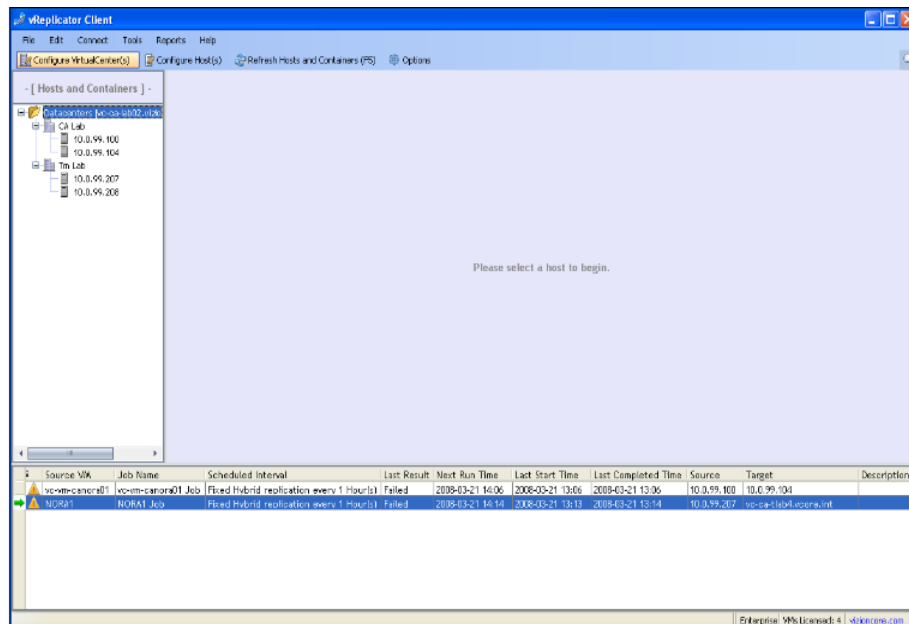


Connect to VCs

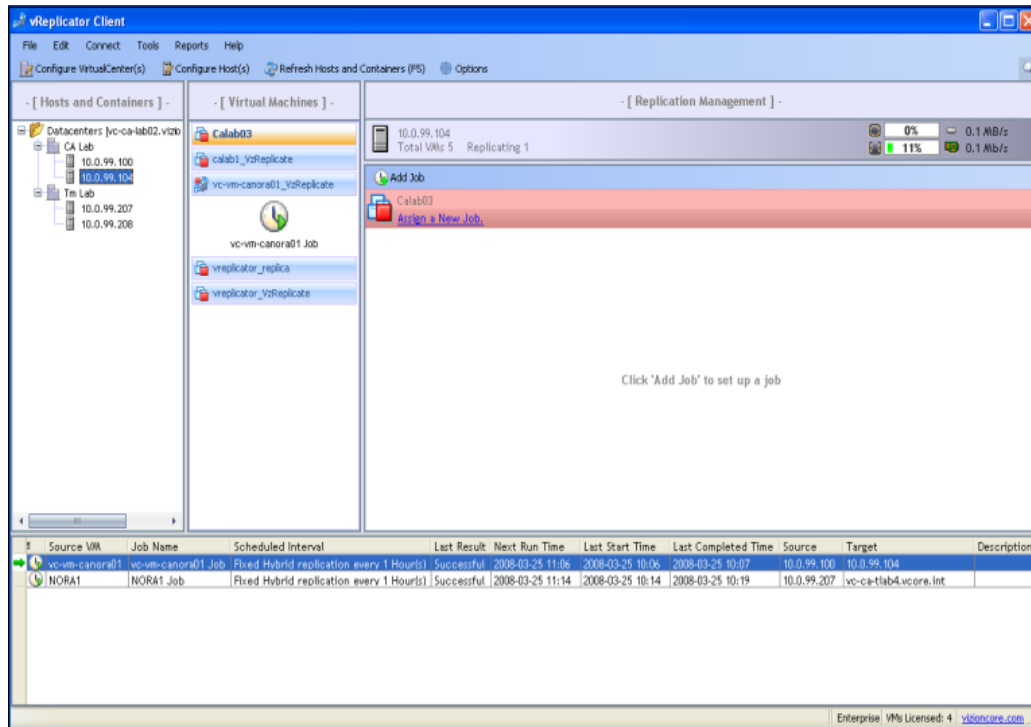
1. In the Hosts and Containers pane of the vReplicator window, click **Select Service**. The Connections Setup dialog displays.



2. On the VirtualCenter(s) tab, click **Connect to VCs**. vReplicator connects to the VCs that you configured. The VC tree loads in the Hosts and Containers pane.



- In the Hosts and Containers pane, click on a host. Data associated with the configured VCs load in the Virtual Machines, Replication Management, and Replication Log panes.



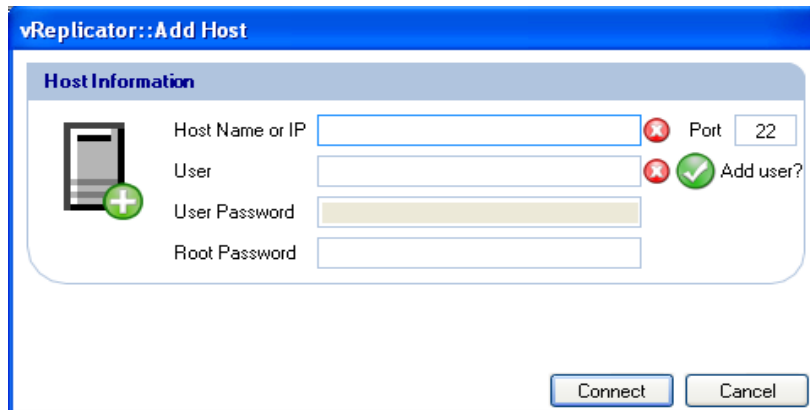
Configure a Host





1. In the Hosts and Containers pane, click **Select Service**.

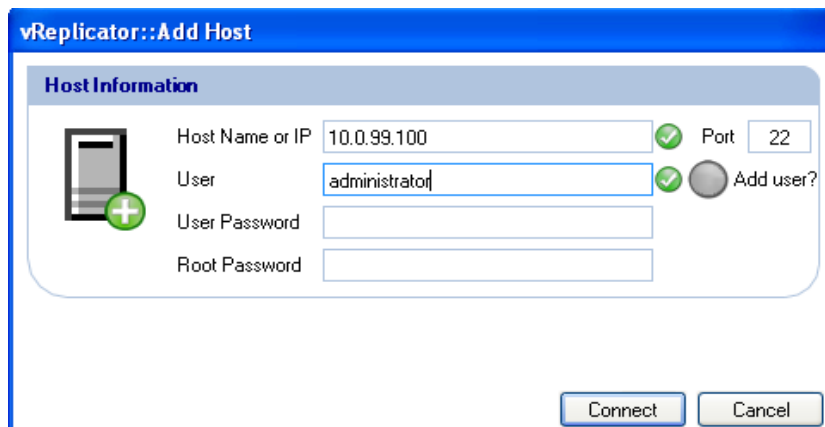
OR

Click the *Configure Host(s)* icon in the Toolbar.
The Connections Setup dialog displays.

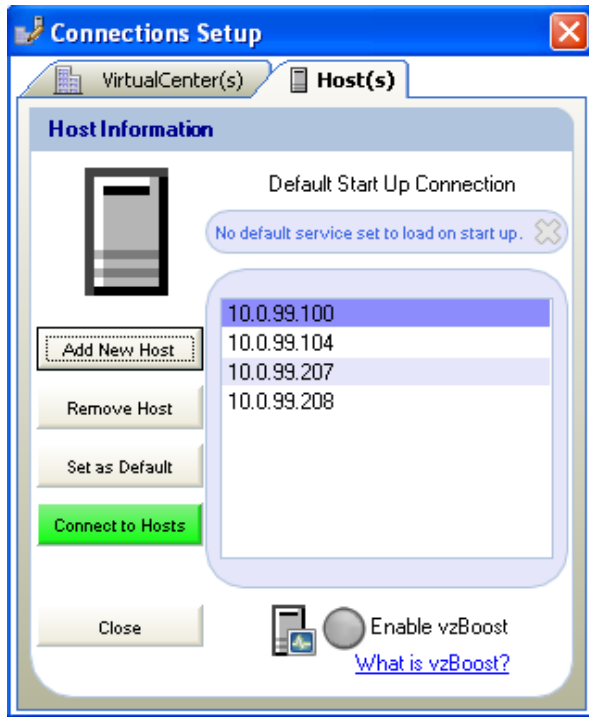
2. On the Host(s) tab, click **Add New Host**.
The Add Host dialog displays.



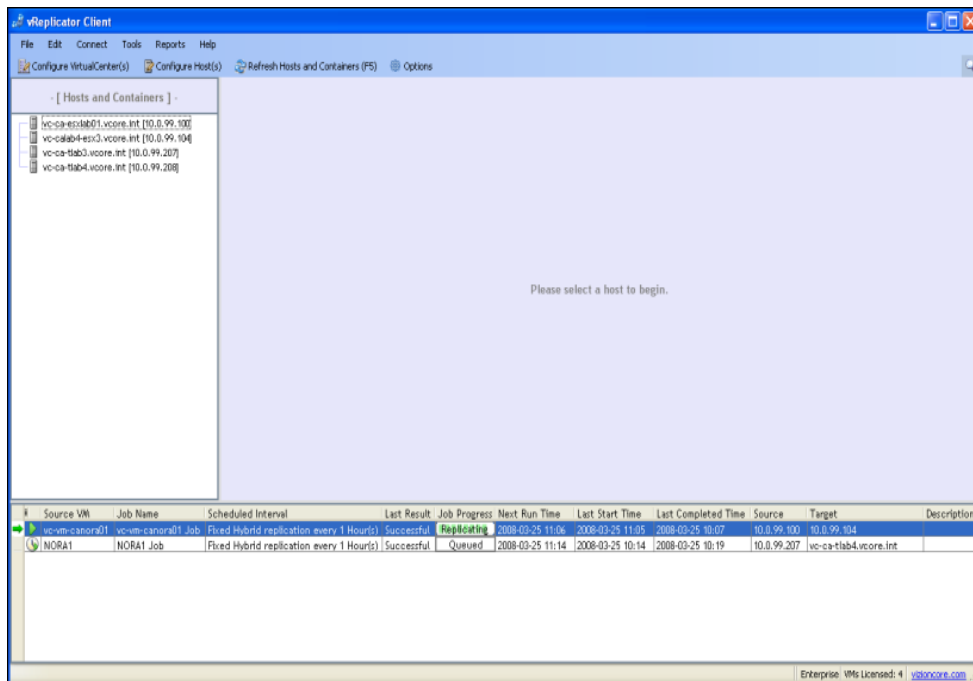
3. In the Host Name or IP field, enter the host name or IP of the server used to connect to the host.
If the value you entered is valid, the  icon changes to .
4. Leave the Value (22) in the Port field as is. In the User field, enter the SA ID.
If the value you entered is valid, the  icon changes to .
5. If you do not want the user ID that you entered to be added to the vReplicator database, clear the Add user checkmark button.



- In the User Password field, enter the password for the SA ID. In the Root Password field, enter the password for the root account. Click **Connect**. The host displays in the text box on the Host(s) tab.



- On the Connections Setup dialog, click **Connect to Hosts**. The host displays in the Hosts and Containers pane.

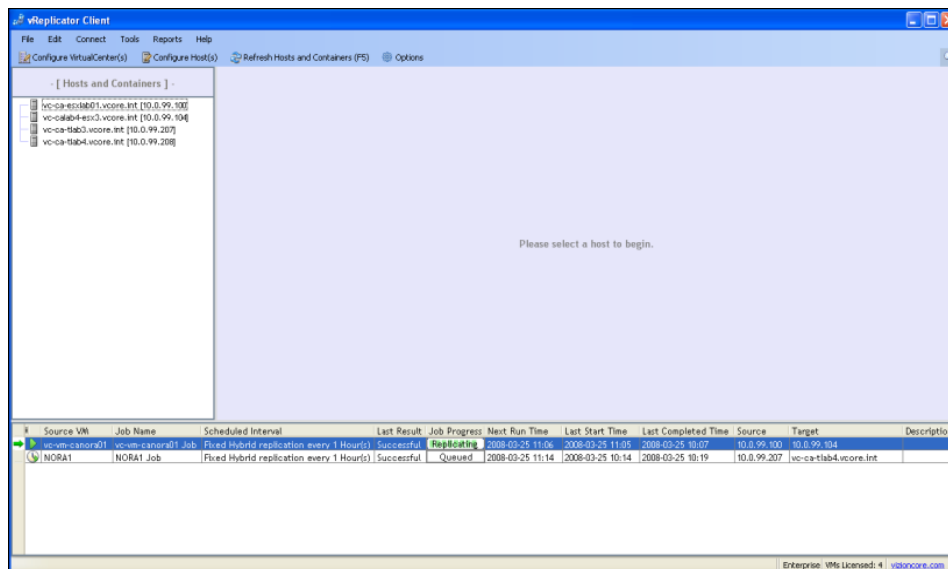


Connect to Hosts

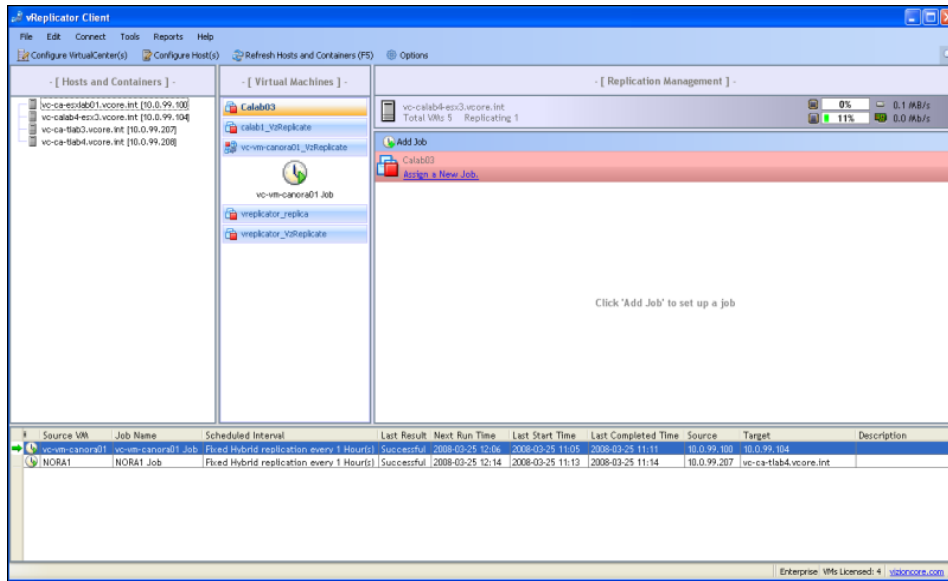
1. In the Hosts and Containers pane of the vReplicator window, click **Select Service**. The Connections Setup dialog displays.



2. Click the Host(s) tab. Click **Connect to Hosts**. vReplicator connects to the hosts that you configured. The hosts load in the Hosts and Containers pane.



- In the Hosts and Containers pane, click on a host. Data associated with the configured hosts load in the Virtual Machines, Replication Management, and Replication Log panes.

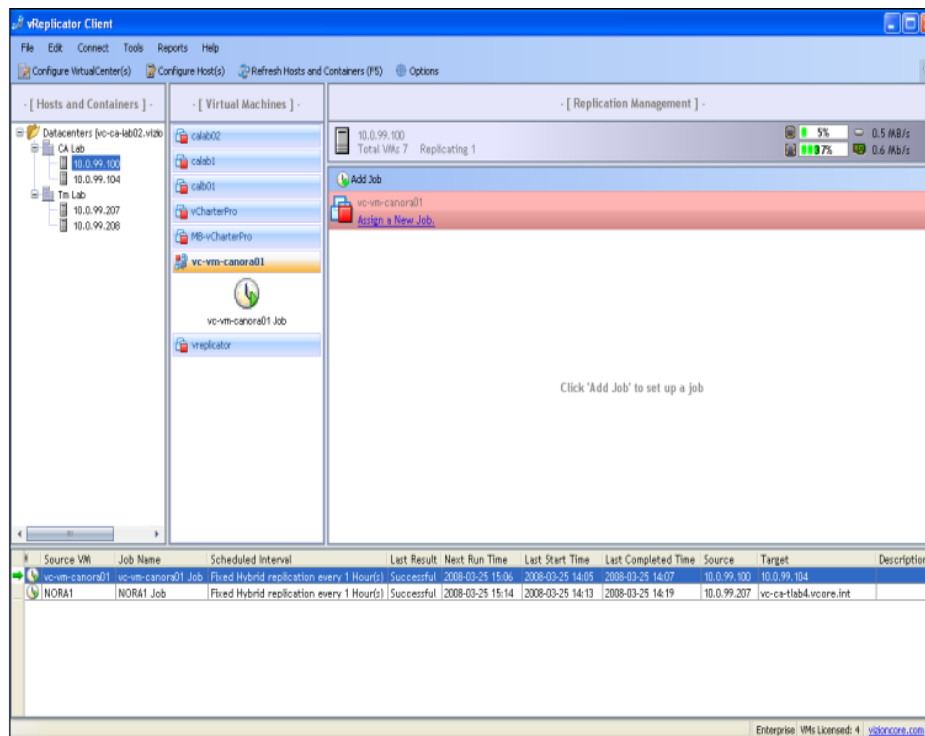


Replication

You can replicate a VM by using the Replication Job Wizard or by dragging and dropping VMs between hosts. Using the first method, you can define all settings to be specific to jobs. Using the drag and drop approach, vReplicator uses the defaults that you established during the initial configuration process. During replication, the source VM can be running or turned off, but the destination VM must be turned off.

Replicate VM Using the Wizard (Hybrid or Differential, Fixed)

1. In the Hosts and Container pane, click to highlight the host on which the source VM resides.
2. In the Virtual Machines pane, click to select the source VM.



3. In the Replication Management pane, click **Add Job** or **Assign a New Job**. The Replication Job Wizard dialog (Step 1) displays.
4. In the Name field, you can change the VM name or leave it as is.

Replication Job Wizard

Replication Job Wizard - Step 1 of 5 -
Please choose a name, description and when to perform this job.

Name:

Description:

Replication Type: Hybrid Differential [Help](#)

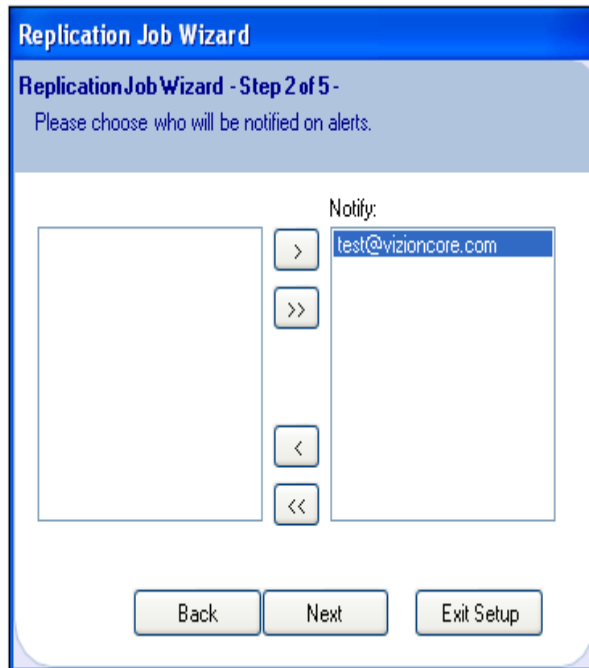
Perform this job every: Fixed Sliding [Help](#)

Days Hours Minutes
Must be greater than or equal to 15 minutes

Next Start Time:

Next Start Date:

5. Populate the Description field.
6. In the Replication Type field, select a radio button—**Hybrid** or **Differential**.
7. In the Perform this job every field, select **Fixed**. Then, use the spin boxes to enter a timeframe.
8. Set a time in the Next Start Time spin box.
9. Select a date from the Next Start Date dropdown.
10. Click **Next**.
The Step 2 dialog displays.

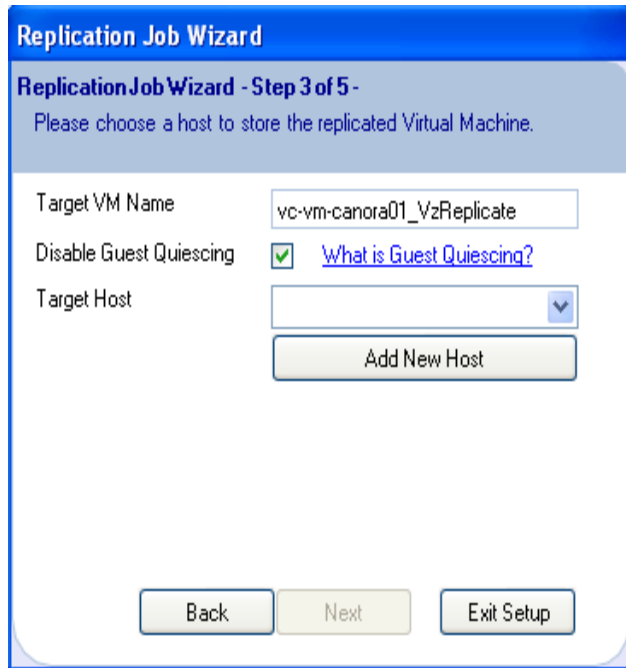


11. In the Notify text box, the email address that you added for the default recipient displays. Click **Next**.

OR

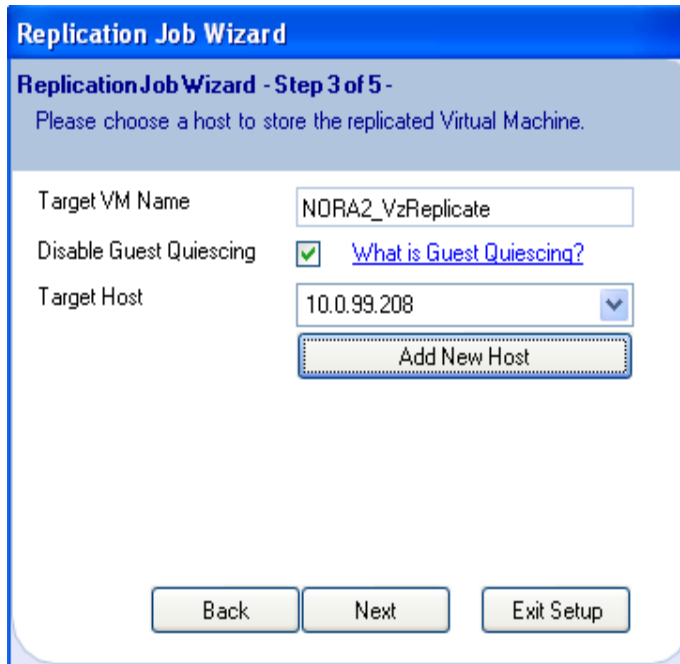
If you want to update the list of users who will be notified about this job, access the Email tab of the Options dialog and supplement the notification list. Return to the Step 2 dialog and click **Next**.

The Step 3 dialog displays.

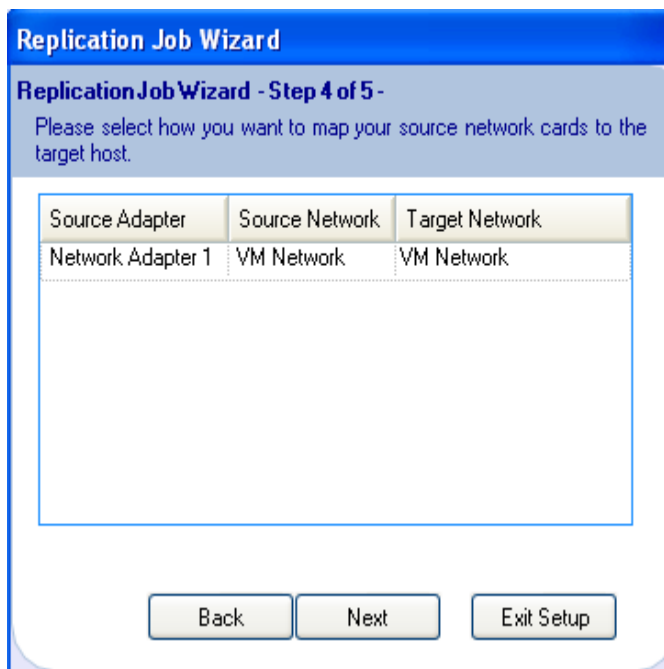


12. You can alter the variable portion of the value in the Target VM Name field. You must not alter the following: `_VzReplicate`.
13. Clear the Disable Guest Quiescing checkbox or leave it selected.
14. Select a destination machine from the Target Host dropdown.

If you want to add a new host, click Add New Host. Populate the fields on the Add Host dialog. Click **Connect**. Then, return to the Step 3 dialog and select the new host.

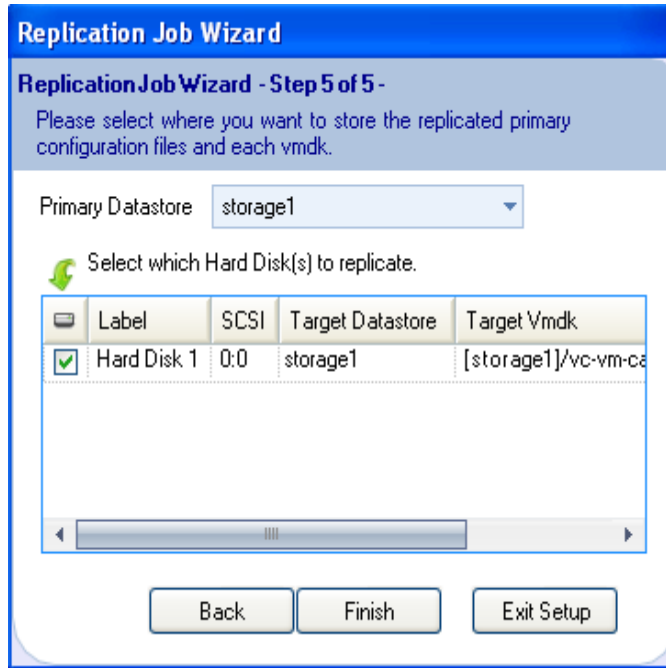


15. On the Step 3 dialog, click **Next**.
The Step 4 dialog displays.



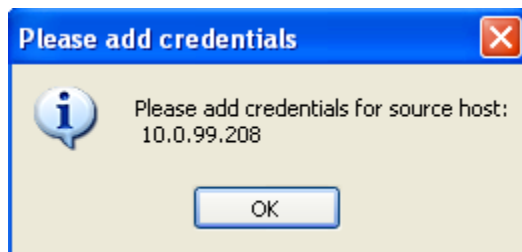
16. The Source Adapter, Source Network, and Target Network columns are auto-populated. If a secondary NIC is available, you can select it by clicking within the Target Network column. Click **Next**.

The Step 5 dialog displays.

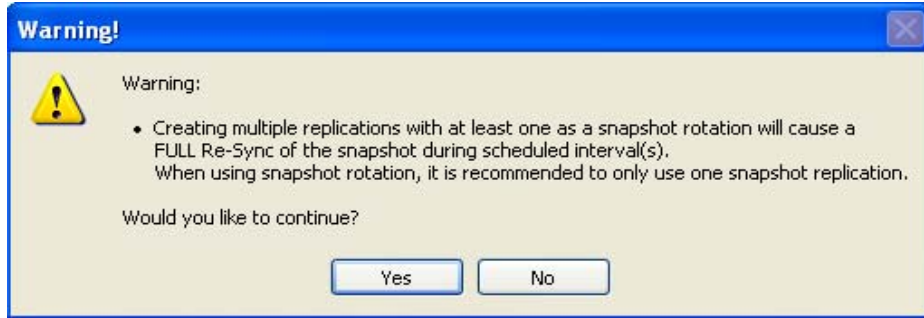


17. Select a value from the Primary Datastore dropdown.
18. If multiple hard disks are listed in the text box, select those that you want to replicate. Clear the others. Click **Finish**.

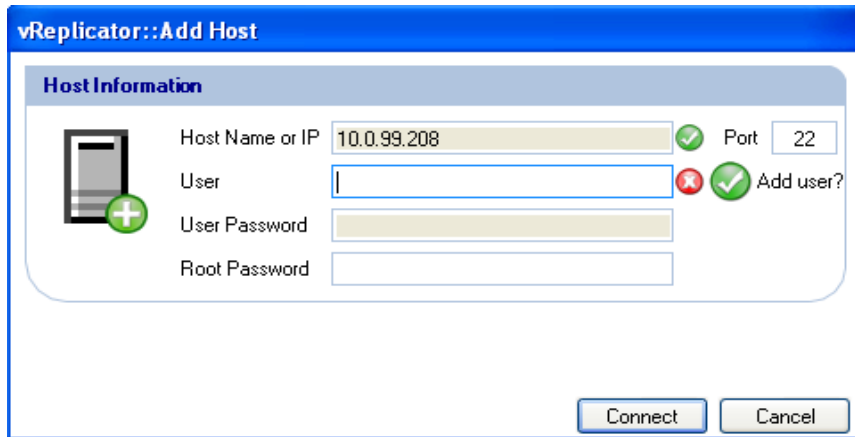
The Please add credentials message displays.





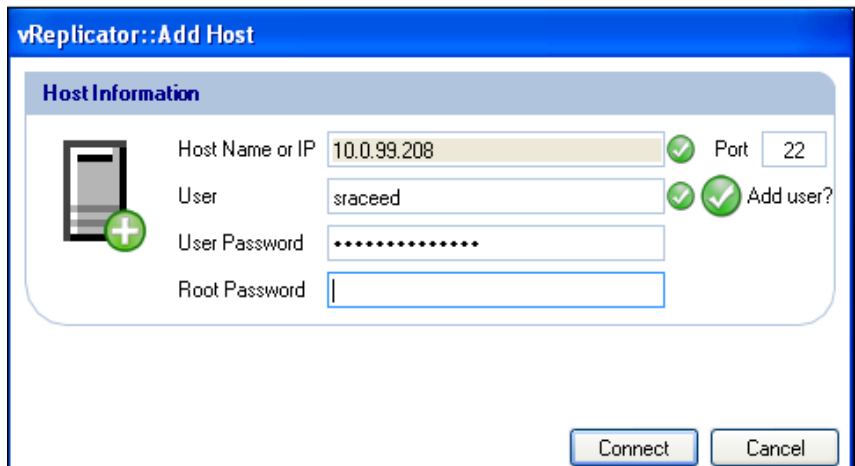
Note: This error message might display. If so, click **Yes**.



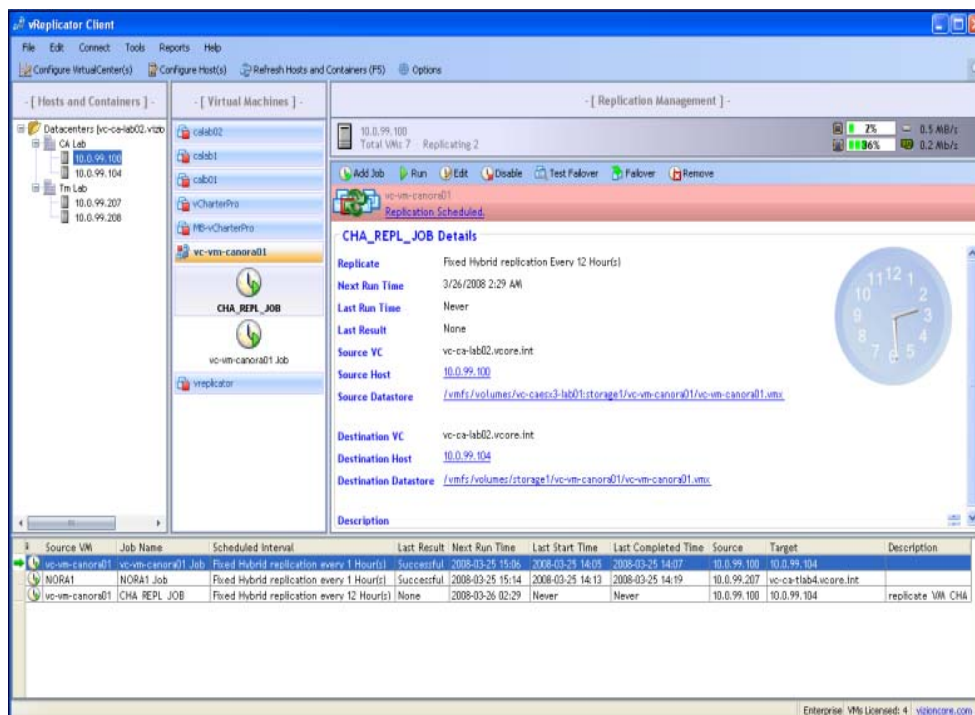
19. Click **OK** to the Please add credentials message. The Add Host dialog displays.



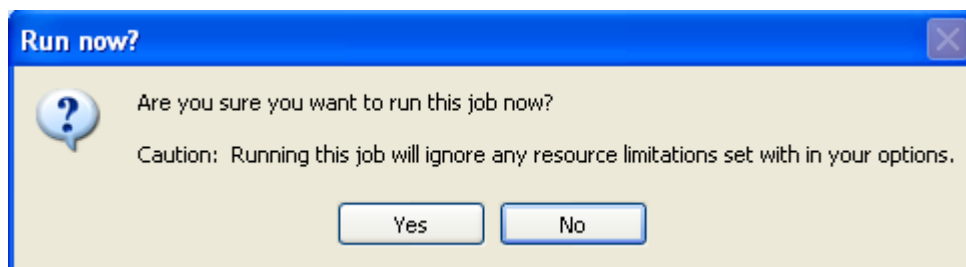
20. Enter the su ID and password in the User and User Password fields, respectively. The  icon adjacent to the User field changes to a  icon if the ID is valid.



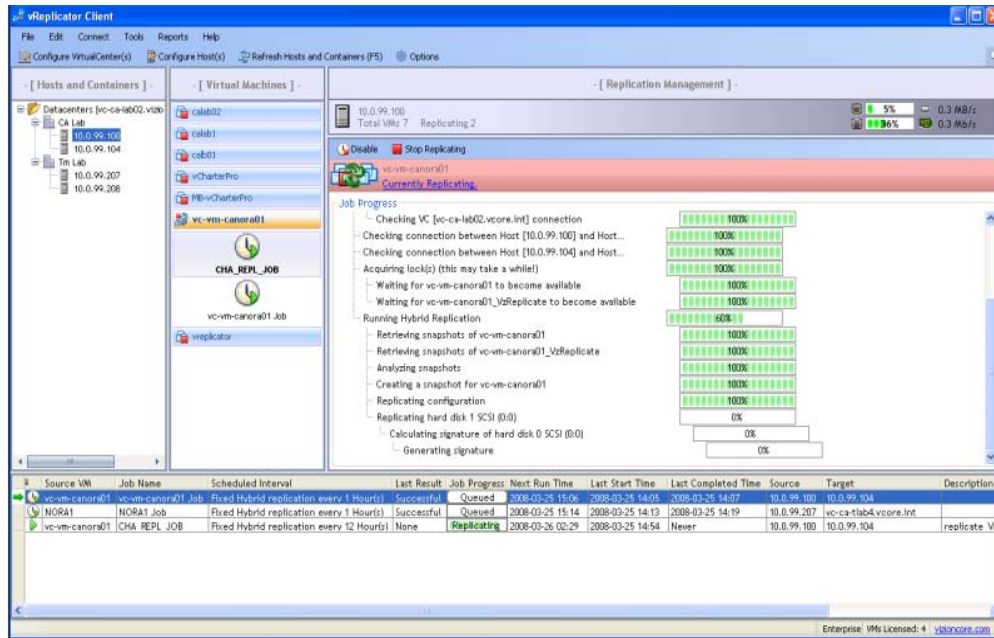
21. Leave the Add user checkmark button selected if you want this user ID added to the database.
22. Enter the root password in the field of the same name. Click **Connect**.
The job displays under the relevant VM in the Virtual Machines pane. In the Replication Management pane, details about the job display. In the Replicating field, the number of VMs increases by the number configured. The Replication Log is populated with data corresponding to the job.



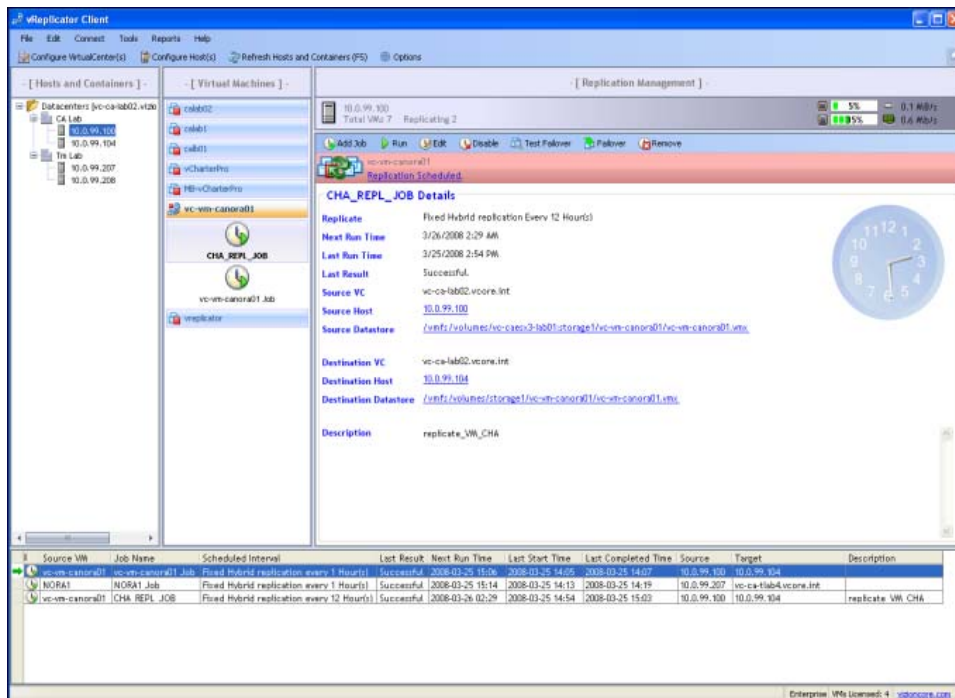
23. To start the replication job immediately, click *Run* in the Replication Management pane's Toolbar. Or wait for the job to run as scheduled. If you click *Run*, a confirmation message will display.



24. Click **Yes**. Once the job starts, the Replication Management pane's view updates. The Job Progress column in the Replication connection Log refreshes with the status *Replicating*.



25. Once the replication job completes, the view updates again. The Last Result column in the Replication Log now has a status of *Successful*.



Replicate VM Using the Wizard (Hybrid or Differential, Sliding)

1. In the Hosts and Container pane, click to highlight the host on which the source VM resides.
2. In the Virtual Machines pane, click to select the source VM.
3. In the Replication Management pane, click **Add Job** or *Assign a New Job*. The Replication Job Wizard dialog (Step 1) displays.
4. In the Name field, you can change the VM name or leave it as is.
5. Populate the Description field.
6. In the Replication Type field, select **Hybrid** or **Differential**.
7. In the Perform this job every field, select **Sliding**. Then, use the spin boxes to enter a timeframe.

Replication Job Wizard

Replication Job Wizard - Step 1 of 5 -
Please choose a name, description and when to perform this job.

Name: CHA_REPL_JOB_3

Description: repl_sliding

Replication Type: Hybrid Differential [Help](#)

Perform this job every: Fixed Sliding [Help](#)

0 Days 1 Hours 0 Minutes

Must be greater than or equal to 15 minutes

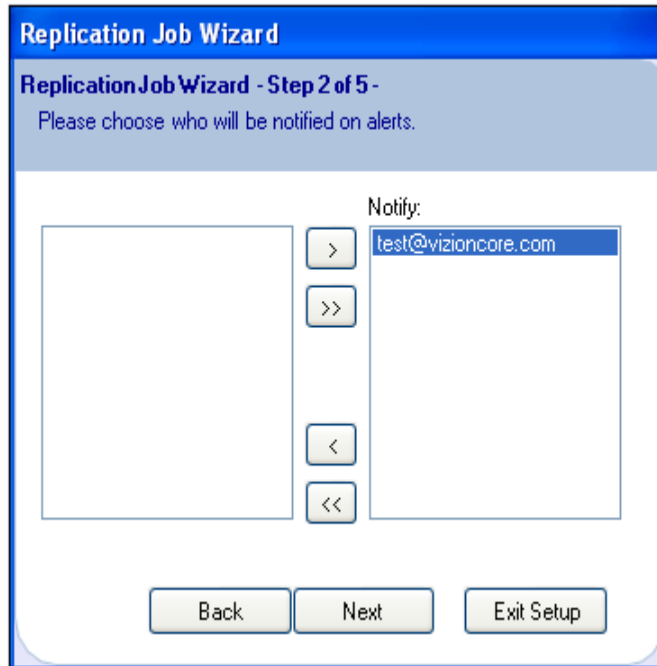
Next Start Time: 07:11

Next Start Date: 3/26/2008

Next Exit Setup

8. Set a time in the Next Start Time spin box.

9. Select a date from the Next Start Date dropdown. Click **Next**. The Step 2 dialog displays.



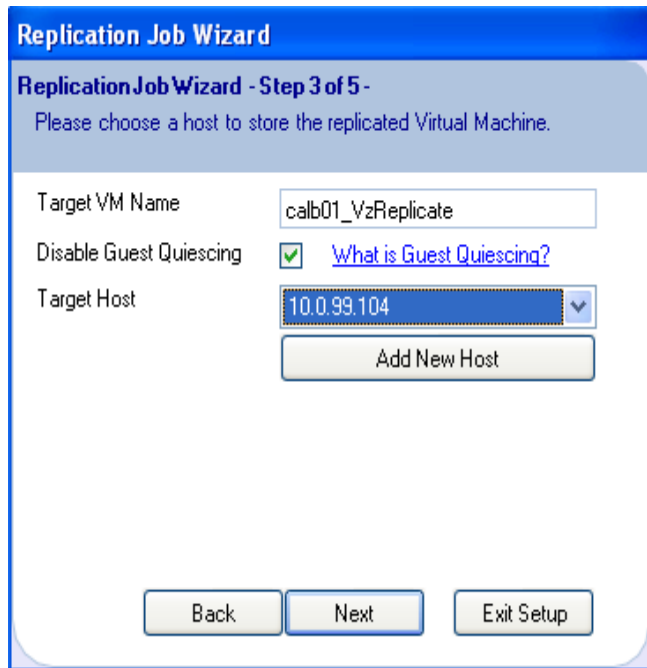
10. In the Notify text box, the email address that you added for the default recipient displays. Click **Next**.

OR

If you want to update the list of users who will be notified about this job, access the Email tab of the Options dialog and supplement the notification list. Return to the Step 2 dialog and click **Next**.

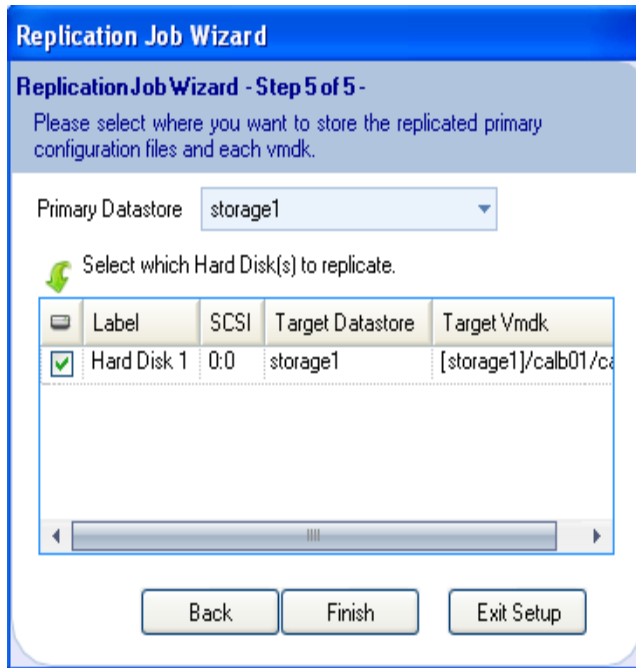
The Step 3 dialog displays.

11. You can alter the variable portion of the value in the Target VM Name field. You must not alter the following: `_VzReplicate`.
12. Clear the Disable Guest Quiescing checkbox or leave it selected.
13. Select a destination machine from the Target Host dropdown.



If you want to add a new host, click Add New Host. Populate the fields on the Add Host dialog. Click **Connect**. Then, return to the Step 3 dialog and select the new host.

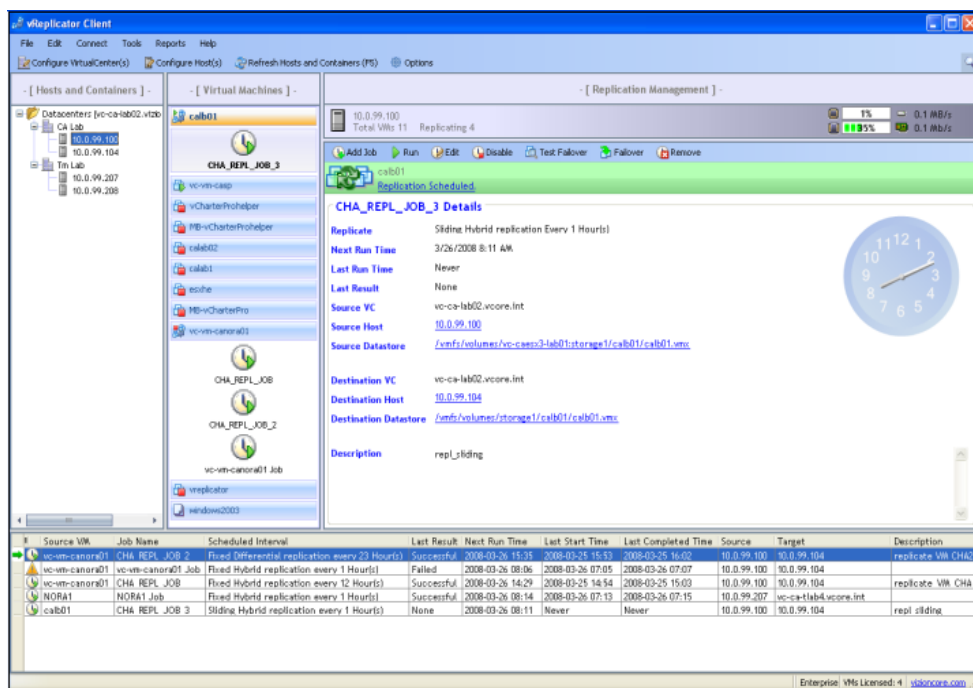
14. On the Step 3 dialog, click **Next**.
The Step 4 dialog displays.
15. The Source Adapter, Source Network, and Target Network columns are auto-populated. If a secondary NIC is available, you can select it by clicking within the Target Network column. Click **Next**.
The Step 5 dialog displays.



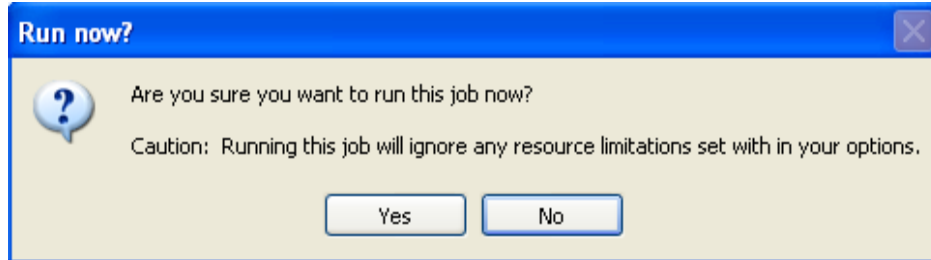
16. Select a value from the Primary Datastore dropdown or leave the default as is.

17. If multiple hard disks are listed in the text box, select only those that you want to replicate. Clear the others. Click **Finish**.

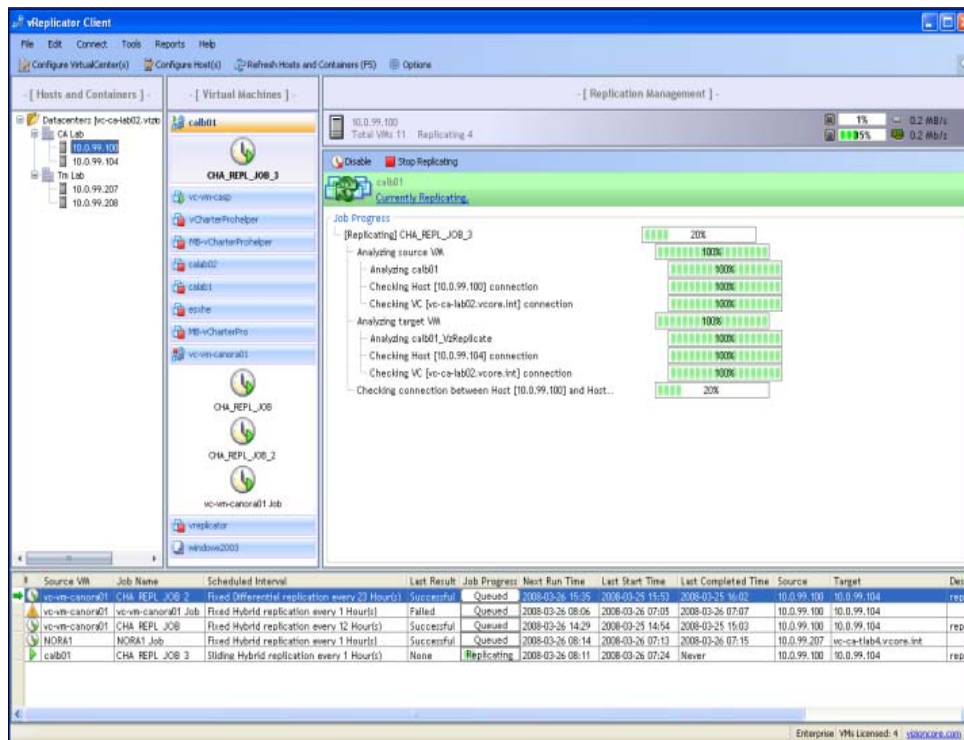
The job displays under the relevant VM in the VMs pane. In the Replication Management pane, details about the job display. In the Replicating field, the number of VMs increases by the number configured. The Replication Log is populated with data corresponding to the job.



- To start the replication job immediately, click *Run* in the Replication Management pane's Toolbar. Or wait for the job to run as scheduled. If you click *Run*, a confirmation message will display.



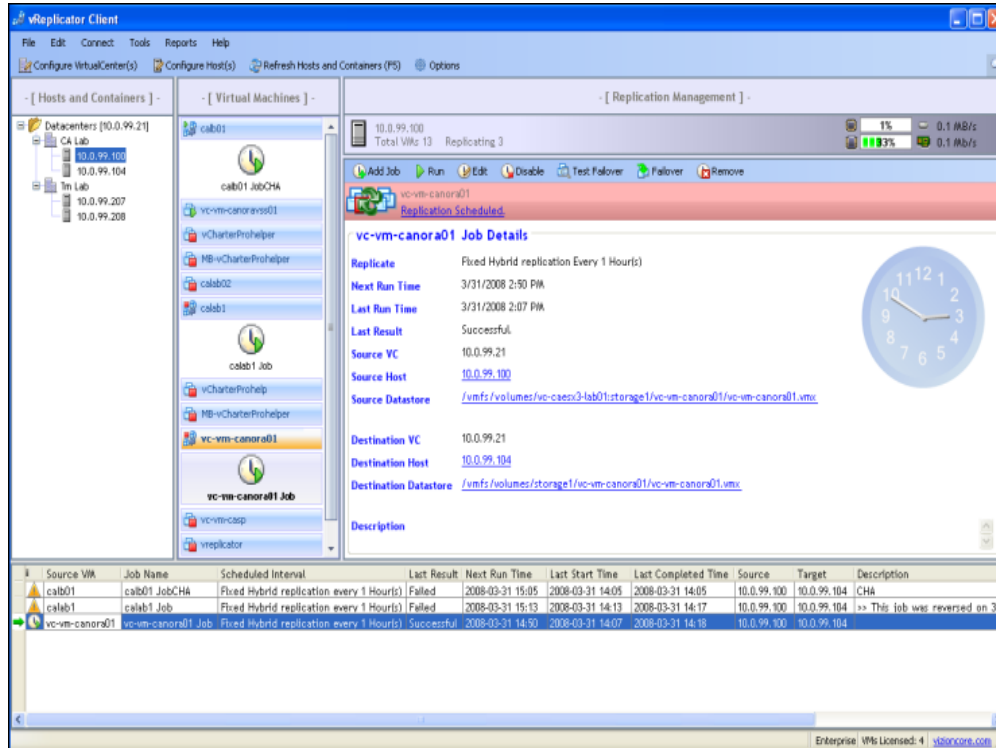
- Click **Yes**. Once the job starts, the Replication Management pane's view updates. The Job Progress column in the Replication Log refreshes with the status *Replicating*.



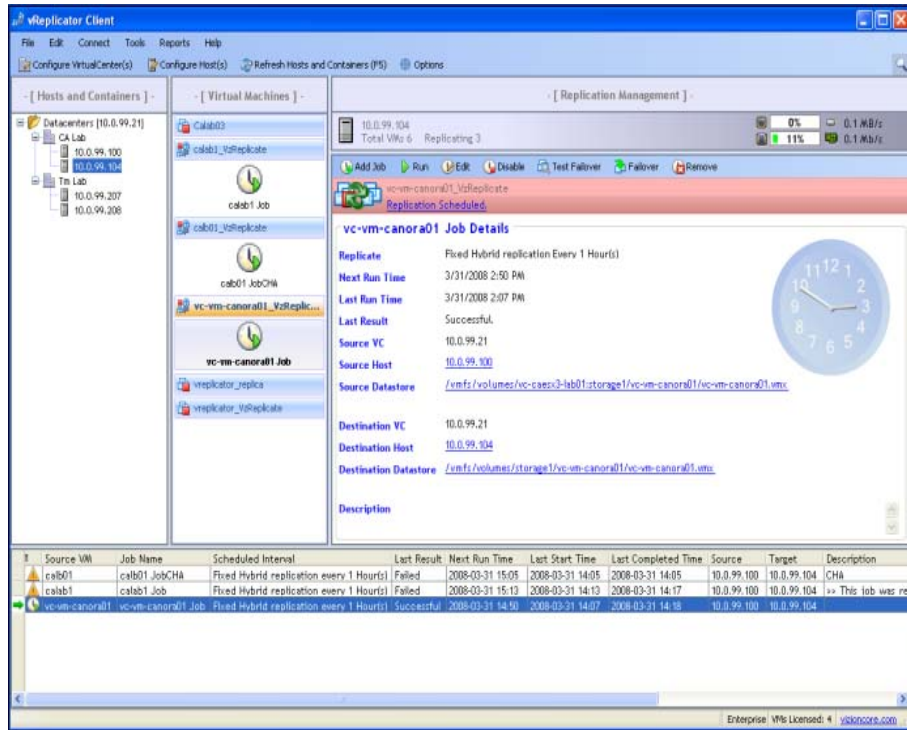
- Once the replication job completes, the view updates again. The Last Result column in the Replication Log now has a status of *Successful*.

Replicate a VM Using Drag and Drop

1. In the Virtual Machines pane, click to select the source VM that you want to replicate. Confirm that the job is displayed in the Replication Management pane.



2. From the Virtual Machines pane, drag the job to the host in which the target VM resides in the Hosts and Containers pane.
3. In the Virtual Machines pane, click to select the destination VM for the replicated job.
The details of the job display in the Replication Management pane.



Replicate VM to Multiple Destinations

These instructions describe the process for creating two replication jobs to run from a single source VM to two separate destination VMs. The jobs share the same timeframe, but the first job that you create will run first. The second job will remain in queue until the first job executes.

1. In the Hosts and Container pane, click to highlight the host on which the source VM resides.
2. In the Virtual Machines pane, click to select the source VM.
3. In the Replication Management pane, click **Add Job**. The Replication Job Wizard dialog (Step 1) displays.
4. In the Name field, you can change the VM name or leave it as is.
5. For the first replication job, populate the Description field.
6. In the Replication Type field, select **Hybrid** or **Differential**.
7. In the Perform this job every field, select **Fixed** or **Sliding**. Then, use the spin boxes to enter a timeframe.

Replication Job Wizard

Replication Job Wizard - Step 1 of 5 -
Please choose a name, description and when to perform this job.

Name:

Description:

Replication Type: Hybrid Differential [Help](#)

Perform this job every: Fixed Sliding [Help](#)

Days Hours Minutes
Must be greater than or equal to 15 minutes

Next Start Time:

Next Start Date:

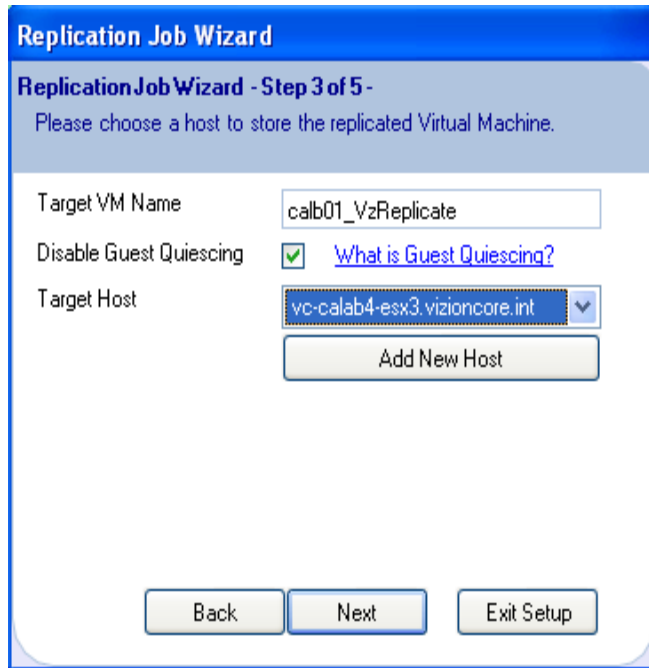
8. Set a time in the Next Start Time spin box.
9. Select a date from the Next Start Date dropdown. Click **Next**. The Step 2 dialog displays.
10. In the Notify text box, the email address that you added for the default recipient displays. Click **Next**.

OR

If you want to update the list of users who will be notified about this job, access the Email tab of the Options dialog and supplement the notification list. Return to the Step 2 dialog and click **Next**.

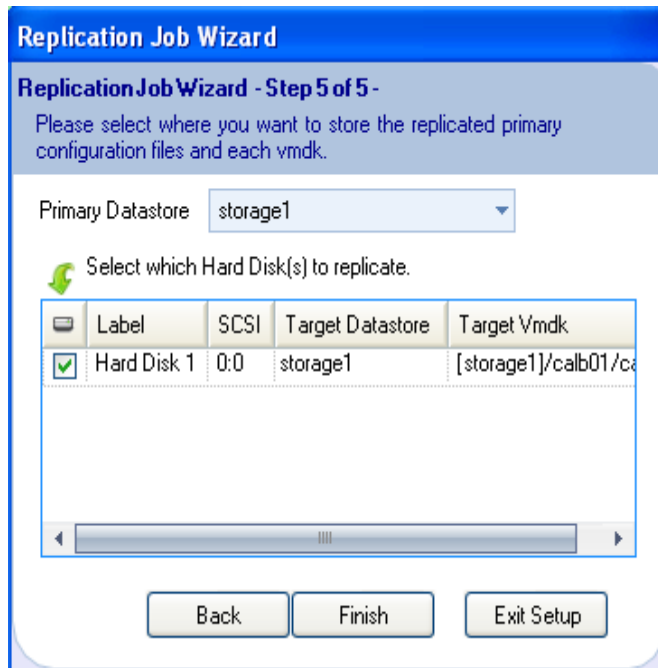
The Step 3 dialog displays.

11. You can alter the variable portion of the value in the Target VM Name field. You must not alter the following: `_VzReplicate`.
12. Clear the Disable Guest Quiescing checkbox or leave it selected.
13. Select a destination machine from the Target Host dropdown.

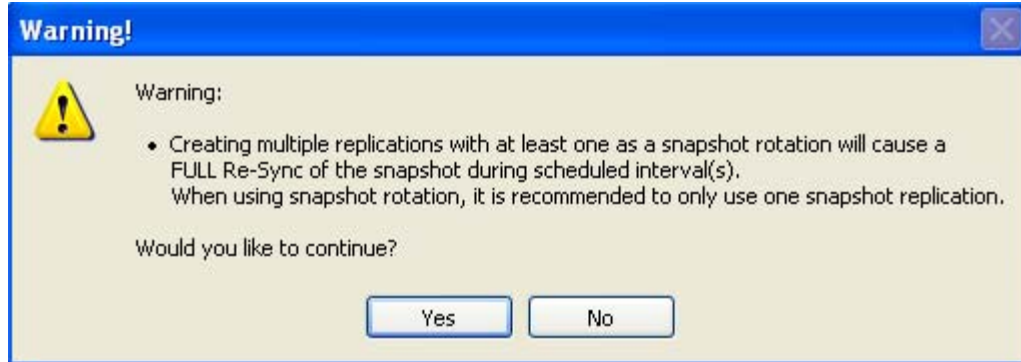


If you want to add a new host, click Add New Host. Populate the fields on the Add Host dialog. Click **Connect**. Then, return to the Step 3 dialog and select the new host.

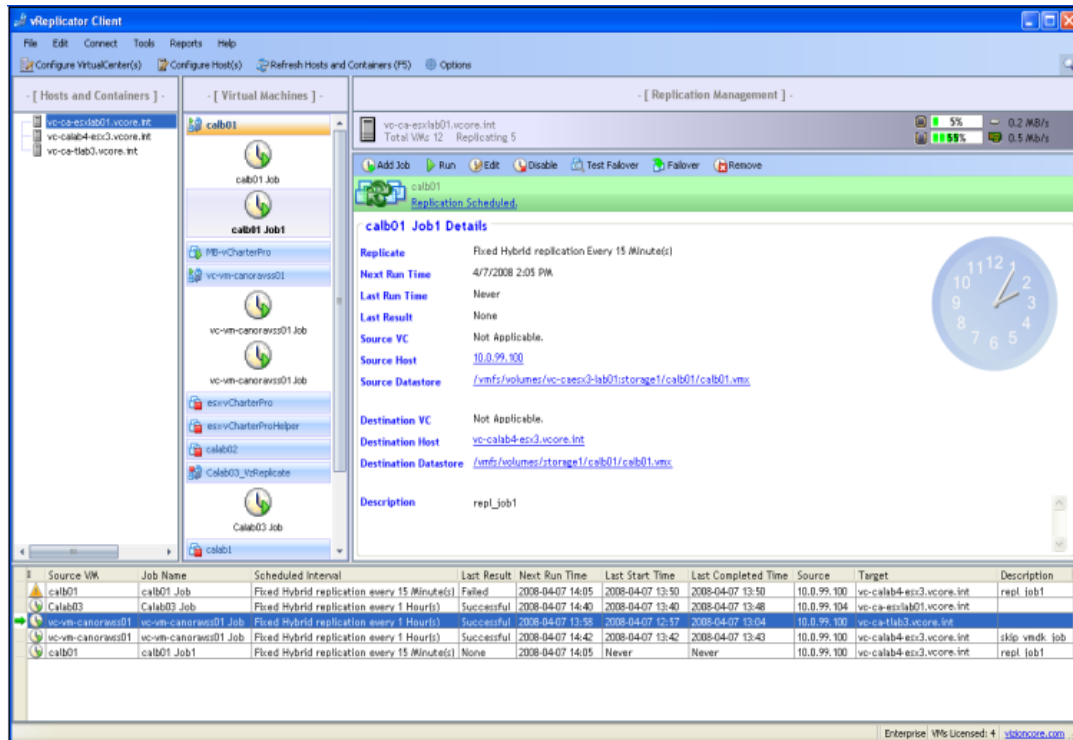
14. On the Step 3 dialog, click **Next**.
The Step 4 dialog displays.
15. The Source Adapter, Source Network, and Target Network columns are auto-populated. If a secondary NIC is available, you can select it by clicking within the Target Network column. Click **Next**.
The Step 5 dialog displays.
16. Select a value from the Primary Datastore dropdown or leave the default as is.



17. If multiple hard disks are listed in the text box, select only those that you want to replicate. Clear the others. Click **Finish**.
A warning message displays. Click **Yes**.



The first job displays in the VMs pane. In the Replication Management pane, details about the job display. In the Replicating field, the number of VMs increases by the number configured. The Replication Log is populated with data corresponding to the job.



18. With the details of the first job displayed in the Replication Management pane, schedule the second replication job. Click **Add Job**.
The Replication Job Wizard dialog (Step 1) displays.
19. In the Name field, you can change the VM name or leave it as is.
20. Populate the Description field.
21. In the Replication Type field, select **Hybrid** or **Differential**.
22. In the Perform this job every field, select **Fixed** or **Sliding**. Then, use the spin boxes to enter the same timeframe that you used in step 7.
23. Leave the setting in the Next Start Time spin box as is.

24. Leave the setting in the Next Start Date dropdown as is.

The screenshot shows the 'Replication Job Wizard - Step 1 of 5' dialog box. The title bar reads 'Replication Job Wizard'. Below the title bar, the text says 'Replication Job Wizard - Step 1 of 5 - Please choose a name, description and when to perform this job.' The dialog contains several input fields and options: 'Name' is 'calb01 Job2', 'Description' is 'repl_job2', 'Replication Type' has 'Hybrid' selected, 'Perform this job every' has 'Fixed' selected, and the frequency is set to '0 Days 0 Hours 15 Minutes'. A red warning message states 'Must be greater than or equal to 15 minutes'. 'Next Start Time' is '13:59' and 'Next Start Date' is '4/ 7/2008'. At the bottom are 'Next' and 'Exit Setup' buttons.

25. Click **Next**.

The Step 2 dialog displays.

26. In the Notify text box, the email address that you added for the default recipient displays. Click **Next**.

OR

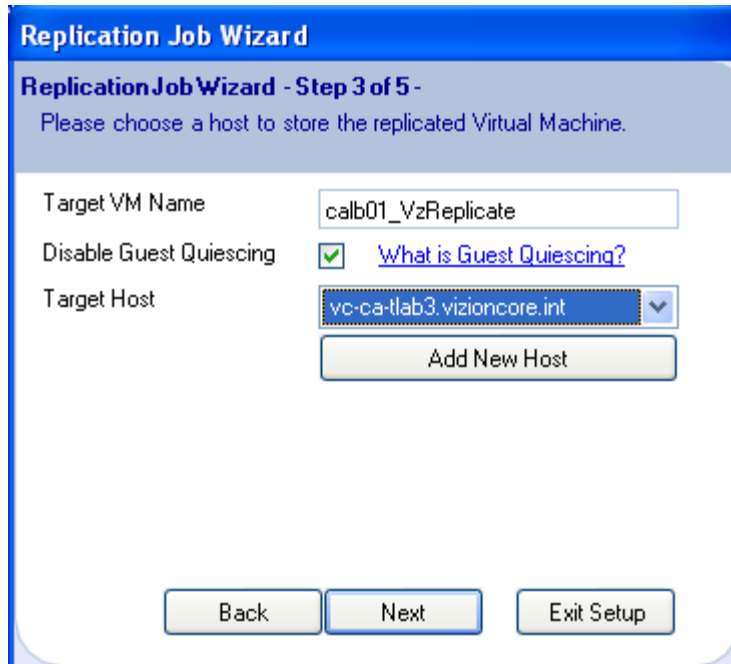
If you want to update the list of users who will be notified about this job, access the Email tab of the Options dialog and supplement the notification list. Return to the Step 2 dialog and click **Next**.

The Step 3 dialog displays.

27. You can alter the variable portion of the value in the Target VM Name field. You must not alter the following: `_VzReplicate`.

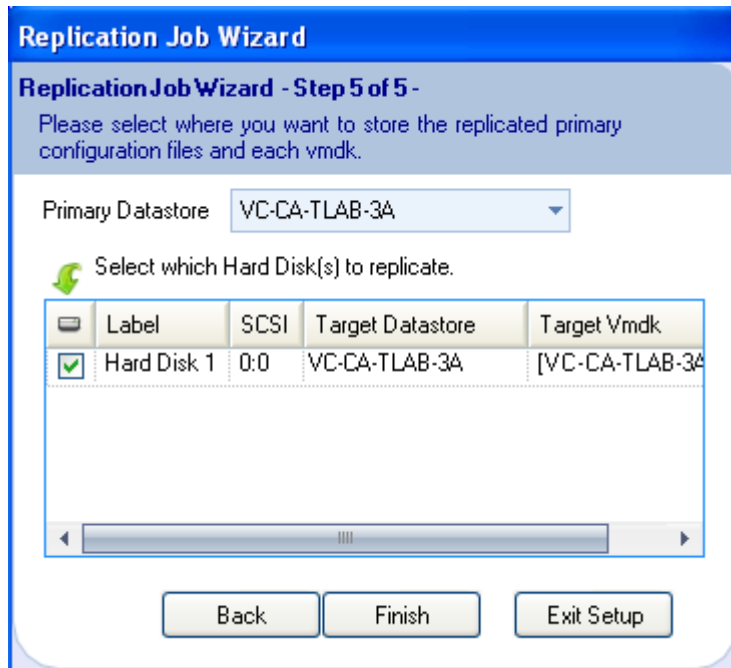
28. Clear the Disable Guest Quiescing checkbox or leave it selected.

29. From the Target Host dropdown, select a destination machine that is different from the one you selected in step 13.

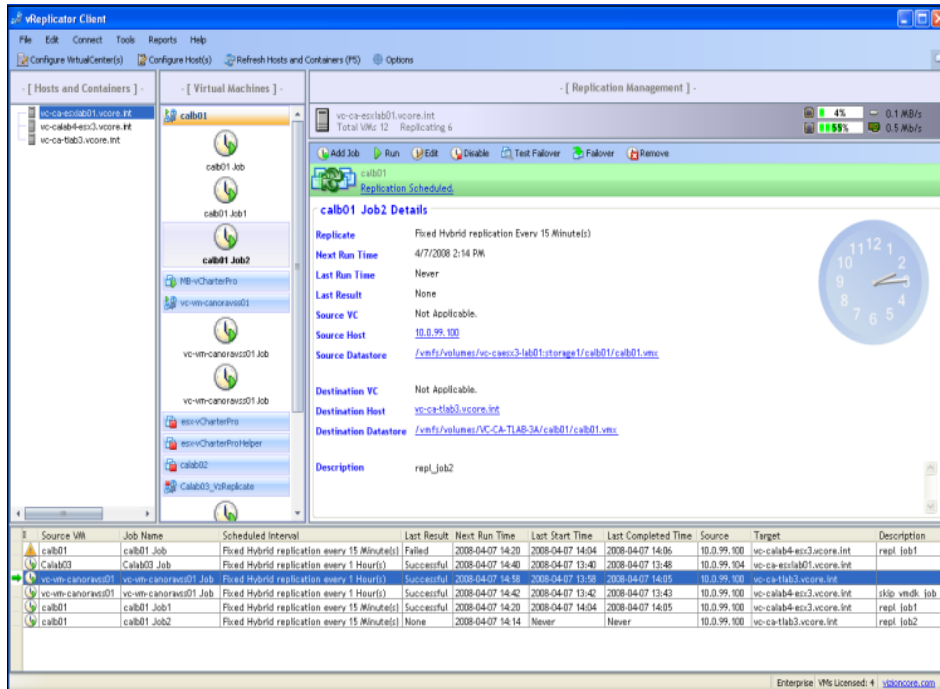


If you want to add a new host, click Add New Host. Populate the fields on the Add Host dialog. Click **Connect**. Then, return to the Step 3 dialog and select the new host.

30. On the Step 3 dialog, click **Next**.
The Step 4 dialog displays.
31. The Source Adapter, Source Network, and Target Network columns are auto-populated. If a secondary NIC is available, you can select it by clicking within the Target Network column. Click **Next**.
The Step 5 dialog displays.



32. Select a value from the Primary Datastore dropdown or leave the default as is.
33. If multiple hard disks are listed in the text box, select only those that you want to replicate. Clear the others. Click **Finish**.
34. Click **Yes** to the warning message.
Information about the second job displays in the Virtual Machines and Replication Management panes. In the Replicating field, the number of VMs increases by the number configured. The Replication Log is populated with data corresponding to the second job.



In this case, the first job has already executed successfully. The second job has not been initiated.

Source VM	Job Name	Scheduled Interval	Last Result	Next Run Time	Last Start Time	Last Completed Time	Source	Target	Description
calb01	calb01 Job	Fixed Hybrid replication every 15 Minute(s)	Failed	2008-04-07 14:20	2008-04-07 14:04	2008-04-07 14:06	10.0.99.100	vc-calab4-esc3.vizioncore.int	repl_lob1
Calab03	Calab03 Job	Fixed Hybrid replication every 1 Hour(s)	Successful	2008-04-07 14:40	2008-04-07 13:40	2008-04-07 13:46	10.0.99.104	vc-ca-esc1ab01.vizioncore.int	
vc-vm-canonaws01	vc-vm-canonaws01 Job	Fixed Hybrid replication every 1 Hour(s)	Successful	2008-04-07 14:18	2008-04-07 13:58	2008-04-07 14:05	10.0.99.100	vc-ca-tlab3.vizioncore.int	
vc-vm-canonaws01	vc-vm-canonaws01 Job	Fixed Hybrid replication every 1 Hour(s)	Successful	2008-04-07 14:42	2008-04-07 13:42	2008-04-07 13:43	10.0.99.100	vc-calab4-esc3.vizioncore.int	skip vmdb_lob
calb01	calb01 Job1	Fixed Hybrid replication every 15 Minute(s)	Successful	2008-04-07 14:20	2008-04-07 14:04	2008-04-07 14:05	10.0.99.100	vc-calab4-esc3.vizioncore.int	repl_lob1
calb01	calb01 Job2	Fixed Hybrid replication every 15 Minute(s)	None	2008-04-07 14:14	Never	Never	10.0.99.100	vc-ca-tlab3.vizioncore.int	repl_lob2

After the second job initiates, the first job is in queue.

Source VM	Job Name	Scheduled Interval	Last Result	Next Run Time	Last Start Time	Last Completed Time	Source	Target	Description	
calb01	calb01 Job1	Fixed Hybrid replication every 15 Minute(s)	Successful	Queued	2008-04-07 14:20	2008-04-07 14:04	2008-04-07 14:05	10.0.99.100	vc-calab4-esc3.vizioncore.int	repl_lob1
calb01	calb01 Job2	Fixed Hybrid replication every 15 Minute(s)	None	Replicating	2008-04-07 14:14	2008-04-07 14:13	Never	10.0.99.100	vc-ca-tlab3.vizioncore.int	repl_lob2

Replicate VM (Skipping VMDKs)

1. In the Hosts and Container pane, click to highlight the host on which the source VM resides.
2. In the Virtual Machines pane, click to select the source VM.
3. In the Replication Management pane, click **Add Job** or **Assign a New Job**. The Replication Job Wizard dialog (Step 1) displays.
4. In the Name field, you can change the VM name or leave it as is.
5. Populate the Description field.
6. In the Replication Type field, select **Hybrid** or **Differential**.
7. In the Perform this job every field, select **Fixed** or **Sliding**. Then, use the spin boxes to enter a timeframe.

Replication Job Wizard

ReplicationJob Wizard - Step 1 of 5 -
Please choose a name, description and when to perform this job.

Name:

Description:

Replication Type: Hybrid Differential [Help](#)

Perform this job every: Fixed Sliding [Help](#)

Days Hours Minutes
Must be greater than or equal to 15 minutes

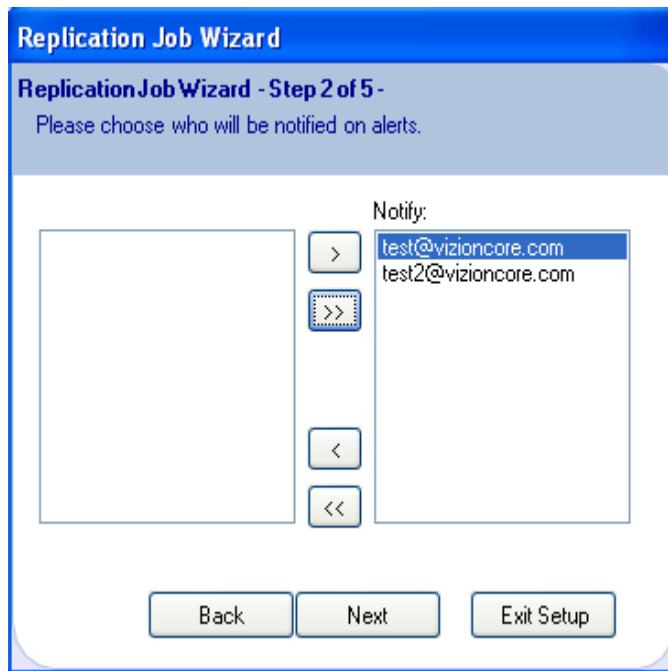
Next Start Time:

Next Start Date:

8. Set a time in the Next Start Time spin box.
9. Select a date from the Next Start Date dropdown. Click **Next**. The Step 2 dialog displays.
10. In the Notify text box, the email address that you added for the default recipient displays. Click **Next**.

OR

If you want to update the list of users who will be notified about this job, access the Email tab of the Options dialog and supplement the notification list. Return to the Step 2 dialog and click **Next**.



The Step 3 dialog displays.

11. You can alter the variable portion of the value in the Target VM Name field. You must not alter the following: `_VzReplicate`.
12. Clear the Disable Guest Quiescing checkbox or leave it selected.
13. Select a destination machine from the Target Host dropdown.

If you want to add a new host, click Add New Host. Populate the fields on the Add Host dialog. Click **Connect**. Then, return to the Step 3 dialog and select the new host.

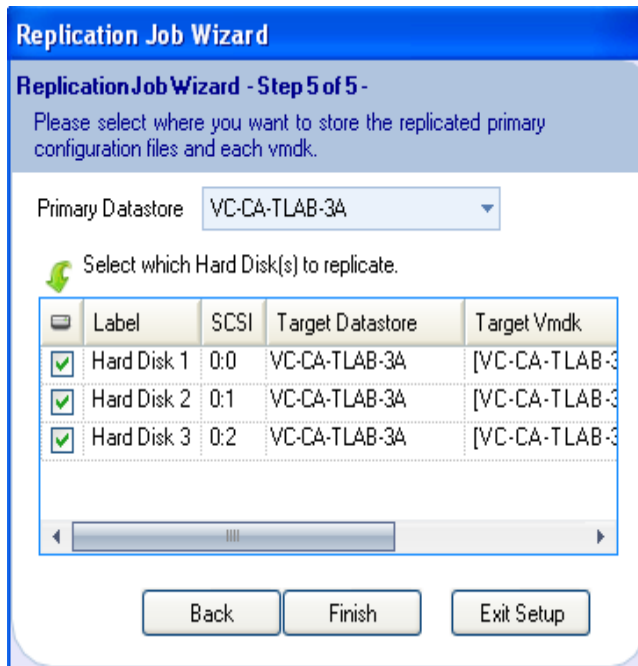
14. On the Step 3 dialog, click **Next**.

The Step 4 dialog displays.

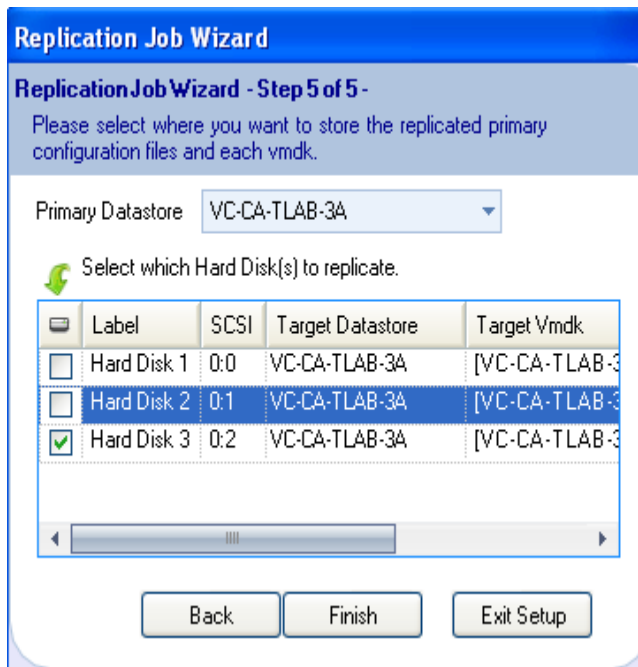
15. The Source Adapter, Source Network, and Target Network columns are auto-populated. If a secondary NIC is available, you can select it by clicking within the Target Network column. Click **Next**.

The Step 5 dialog displays.

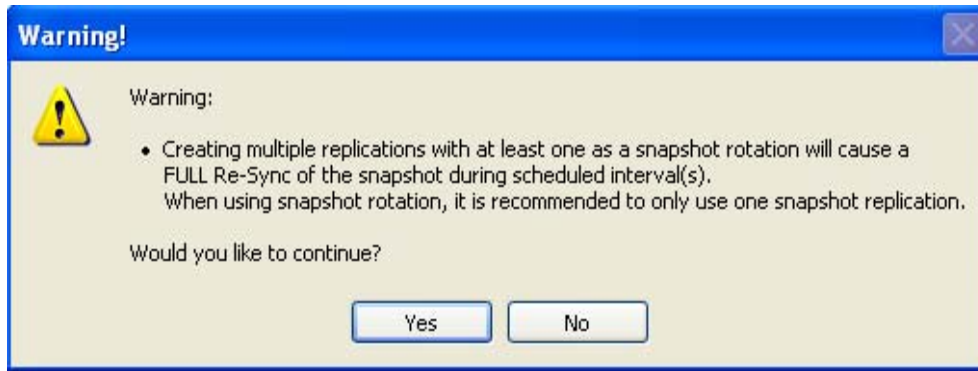
16. Select a value from the Primary Datastore dropdown or leave the default as is.



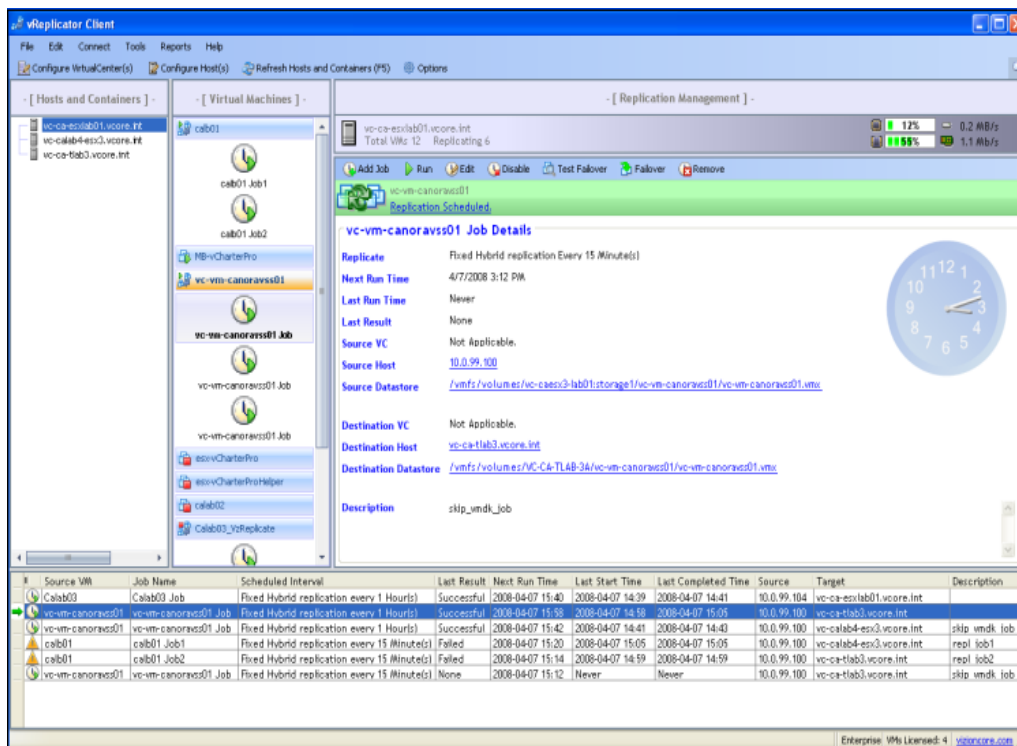
17. Clear the checkboxes that correspond to the hard disks that you do *not* want to replicate.



18. Click **Finish**.
 A warning message displays. Click **Yes**.



The job displays under the relevant VM in the VMs pane. In the Replication Management pane, details about the job display. In the Replicating field, the number of VMs increases by the number configured.



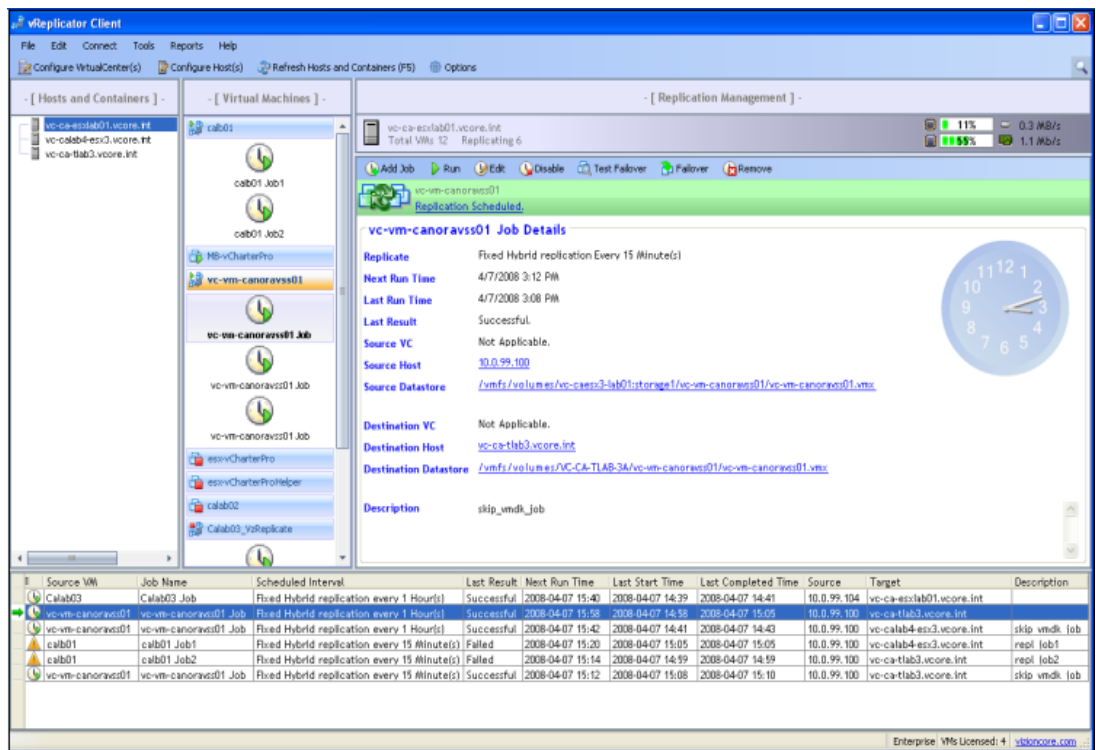
The Replication Log is populated with data corresponding to the job.

vc-vm-canoravss01	vc-vm-canoravss01 Job	Fixed Hybrid replication every 15 Minute(s)	None	2008-04-07 15:12	Never	Never	10.0.99.100	vc-ca-tlab3.vizioncore.int	skip_vmdk_job
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19. To start the replication job immediately, click *Run* in the Replication Management pane's Toolbar. Or wait for the job to run as scheduled. If you click *Run*, a confirmation message will display.
20. Click **Yes**. Once the job starts, the Replication Management pane's view updates. The Job Progress column in the Replication Log refreshes with the status *Replicating*.

vc-vm-...	vc-vm-...	Fixed Hybrid replication every 15 Minute(s)	None	Replicating	2008-04-07 15:12	2008-04-07 15:08	Never	10.0.99.100	vc-ca-...	skip_vmdk_job
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21. Once the replication job completes, the view updates again.



The Last Result column in the Replication Log now has a status of *Successful*.

vc-vm-canonravss01	vc-vm-canonravss01 Job	Fixed Hybrid replication every 15 Minute(s)	Successful	2008-04-07 15:12	2008-04-07 15:08	2008-04-07 15:10	10.0.99.100	vc-ca-tlab3.vcore.int	skip_vmdk_job
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Edit a Replication Job

1. In the Virtual Machines pane, navigate to the replication job that you want to update.
Details about the job display in the Replication Management pane.
2. From the Toolbar, click the *Edit* icon.
The Replication Job Wizard displays.



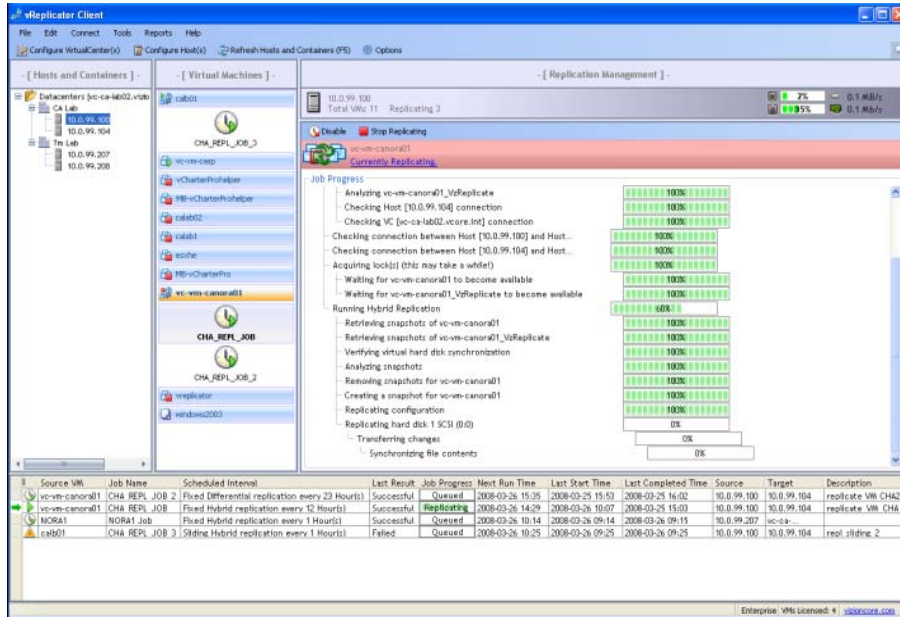
The screenshot shows the 'Replication Job Wizard' dialog box, titled 'Replication Job Wizard - Step 1 of 5'. The instruction reads: 'Please choose a name, description and when to perform this job.' The form contains the following fields and options:

- Name:** A text box containing 'CHA_REPL_JOB_3'.
- Description:** A text box containing 'repl_sliding'.
- Replication Type:** Radio buttons for 'Hybrid' (selected) and 'Differential'. A 'Help' link is to the right.
- Perform this job every:** Radio buttons for 'Fixed' and 'Sliding' (selected). A 'Help' link is to the right.
- Frequency:** Spinners for '0' Days, '1' Hours, and '0' Minutes. A red error message below reads: 'Must be greater than or equal to 15 minutes'.
- Next Start Time:** A spinner box showing '08:25'.
- Next Start Date:** A spinner box showing '3/26/2008'.
- Buttons:** 'Next' and 'Exit Setup' buttons at the bottom.

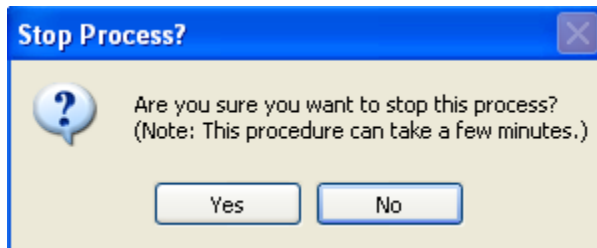
3. Complete the updates, clicking **Next** until you reach the Step 5 dialog. Then, click **Finish**.
The replication job configuration is updated.

Stop a Replication Job

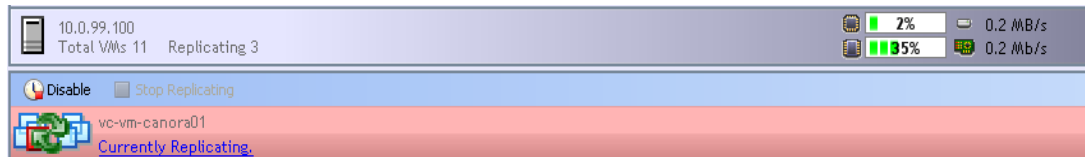
1. During an active replication session, the job details display within the Replication Management pane.



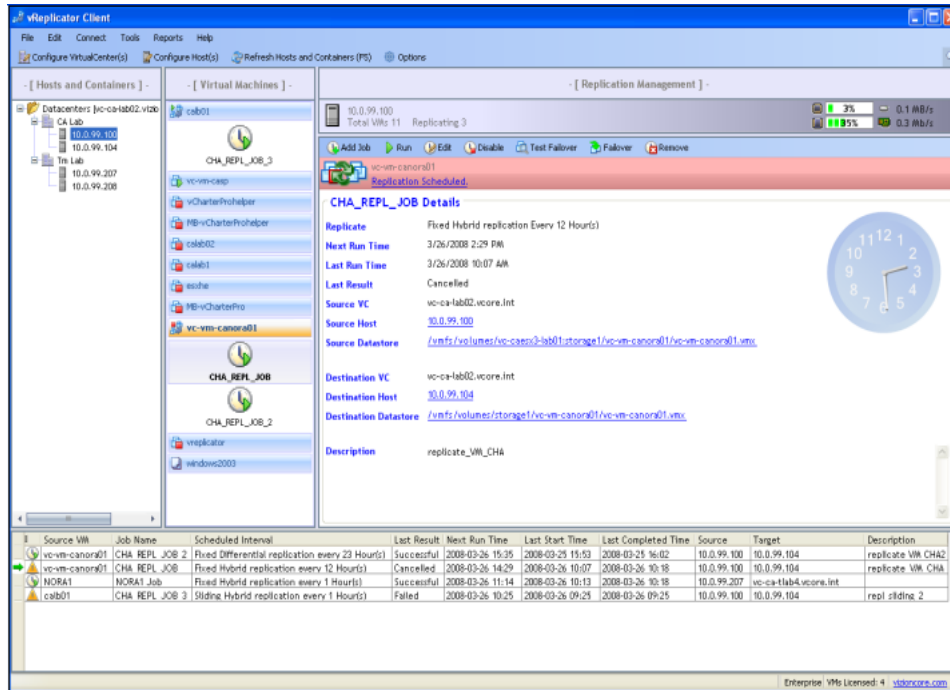
2. Click the *Stop Replicating* icon in the Toolbar. A confirmation message displays.



3. Click **Yes**.
The Toolbar refreshes. The number of VMs replicating is reduced by one. The Stop Replicating icon is disabled. The replication process pauses.



Once the process completes, the vReplicator window updates again. The Toolbar is restored with a complete group of icons. In the Replication Management pane and Replication Log, the Last Result field has a status of *Cancelled*. The *Currently Replicating* setting changes to *Replication Scheduled*.



Disable a Replication Job

- In the Virtual Machines pane, navigate to the replication job that you want to disable.
Details about the job display in the Replication Management pane.
- From the Toolbar, click the *Disable* icon.
A confirmation message displays.



3. Click **Yes**.

The vReplicator window refreshes. This icon displays in the Virtual Machines pane, adjacent to the VM name of the disabled job.



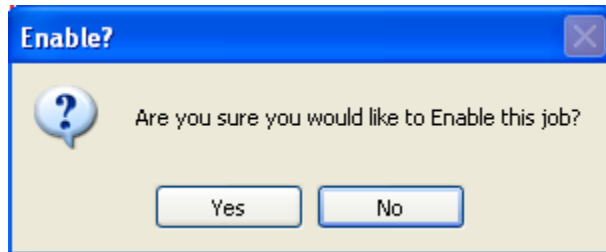
The Replication Management pane updates to indicate that the job has been disabled.

The screenshot shows the vReplicator Client interface. The 'Virtual Machines' pane on the left lists several VMs, with 'vc-vm-canon01' highlighted. The 'Replication Management' pane on the right shows the details for the 'vc-vm-canon01 Job Details (DISABLED)'. The job is currently disabled, and the status bar shows 'Replicating 4' with a progress indicator at 1% and a speed of 0.1 MB/s. A clock icon is visible in the background of the details pane.

Source VM	Job Name	Scheduled Interval	Last Result	Next Run Time	Last Start Time	Last Completed Time	Source	Target	Description
vc-vm-canon01	CHA REPL JOB 2	Fixed Differential replication every 23 Hour(s)	Successful	2008-03-26 15:35	2008-03-25 15:53	2008-03-25 16:02	10.0.99.100	10.0.99.104	replicate VM CHA2
vc-vm-canon01	vc-vm-canon01 Job	Fixed Hybrid replication every 1 Hour(s)	Failed	2008-03-26 08:26	2008-03-26 07:05	2008-03-26 07:07	10.0.99.100	10.0.99.104	
vc-vm-canon01	CHA REPL JOB	Fixed Hybrid replication every 12 Hour(s)	Successful	2008-03-26 14:29	2008-03-25 14:54	2008-03-25 15:03	10.0.99.100	10.0.99.104	replicate VM CHA
NORAI	NORAI Job	Fixed Hybrid replication every 1 Hour(s)	Successful	2008-03-26 08:14	2008-03-26 07:13	2008-03-26 07:15	10.0.99.207	vc-ca-lab4-vcore.int	
cab01	CHA REPL JOB 3	Sliding Hybrid replication every 1 Hour(s)	Failed	2008-03-26 08:25	2008-03-26 07:24	2008-03-26 07:25	10.0.99.100	10.0.99.104	repl sliding 2

Enable a Replication Job

1. In the Virtual Machines pane, navigate to the replication job that you want to enable.
Details about the job display in the Replication Management pane.
2. From the Toolbar, click the *Enable* icon.
A confirmation message displays.



3. Click **Yes**.
The vReplicator window refreshes. This icon displays in the Virtual Machines pane, adjacent to the VM name of the enabled job.



The job view of the Replication Management pane updates to indicate that the job has been enabled.

Source VM	Job Name	Scheduled Interval	Last Result	Next Run Time	Last Start Time	Last Completed Time	Source	Target	Description
vc-vm-canon01	CHA REPL JOB 2	Fixed Differential replication every 23 Hour(s)	Successful	2008-03-26 15:35	2008-03-25 15:53	2008-03-25 16:02	10.0.99.100	10.0.99.104	replicate VM CHA2
vc-vm-canon01	vc-vm-canon01 Job	Fixed Hybrid replication every 1 Hour(s)	Failed	2008-03-26 09:04	2008-03-26 07:01	2008-03-26 07:07	10.0.99.100	10.0.99.104	
vc-vm-canon01	CHA REPL JOB	Fixed Hybrid replication every 12 Hour(s)	Successful	2008-03-26 14:29	2008-03-25 14:54	2008-03-25 15:03	10.0.99.100	10.0.99.104	replicate VM CHA
NOR01	NOR01 Job	Fixed Hybrid replication every 1 Hour(s)	Successful	2008-03-26 08:14	2008-03-26 07:13	2008-03-26 07:15	10.0.99.207	vc-ca-lab02-vcore-int	
lab01	CHA REPL JOB 3	Sliding Hybrid replication every 1 Hour(s)	Failed	2008-03-26 08:23	2008-03-26 07:24	2008-03-26 07:25	10.0.99.100	10.0.99.104	repl sliding 2

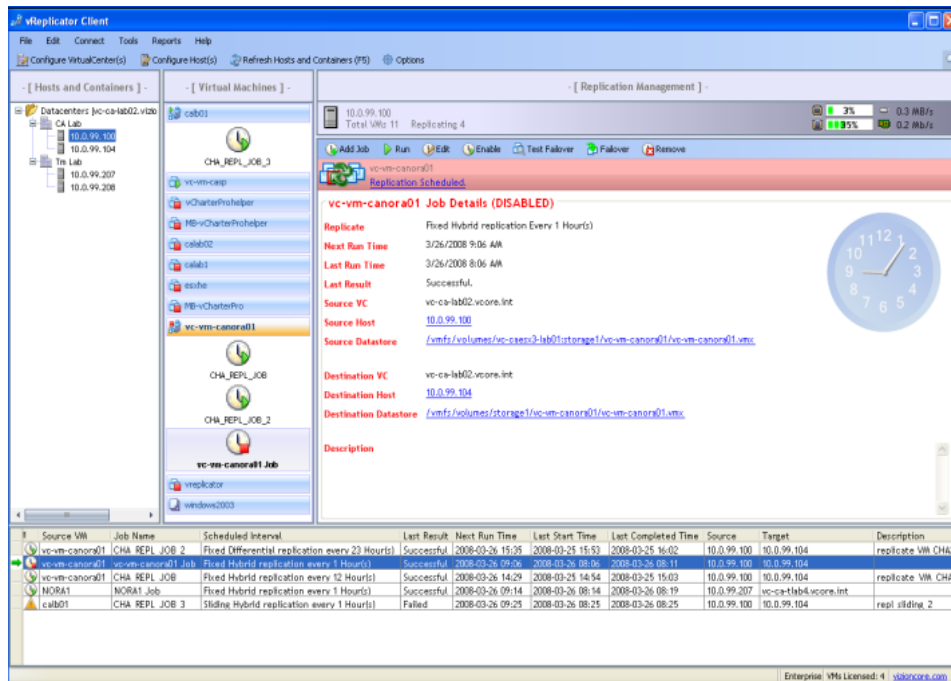
Test Failover

Before you initiate a test failover, you must disable the replication job. If you do not, an error message will display.

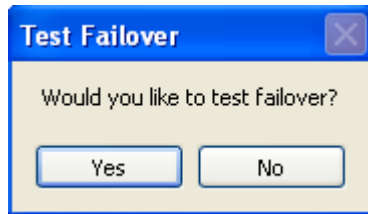
1. In the Virtual Machines pane, navigate to the replication job that you want to disable.
Details about the job display in the Replication Management pane.
2. From the Toolbar, click the *Disable* icon.
A confirmation message displays.



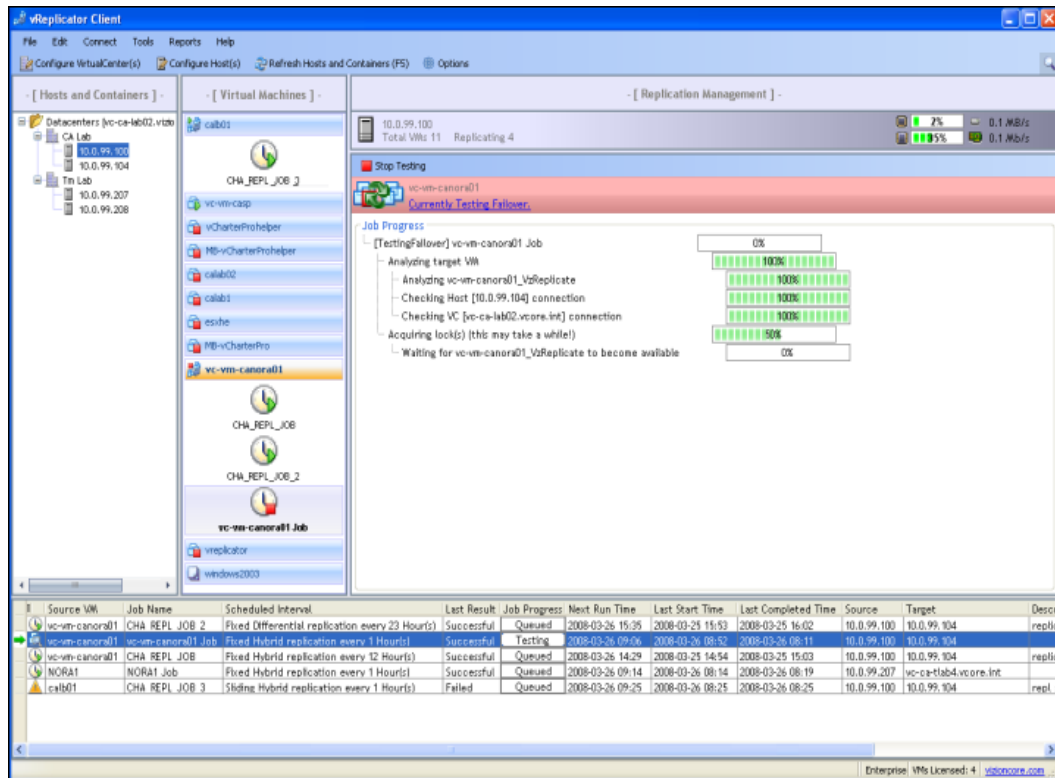
3. Click **Yes**.
The vReplicator window refreshes. The job is disabled.



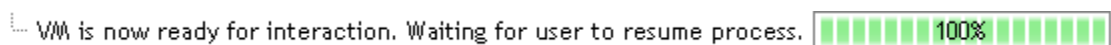
- Click the *Test Failover* icon.
A confirmation message displays.



- Click **Yes**.
The test failover process begins. In the Replication Management pane, *Currently Testing Failover* displays in the Toolbar. In the Replication Log, the Job Progress column has a *Testing* status.

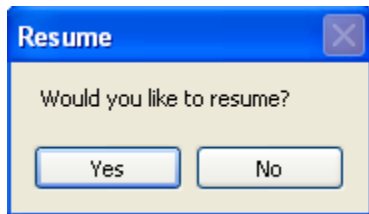


- If the task below displays in the Replication Management pane and the *Stop Testing* icon changes to *Resume*, click it to restart testing.





7. When this confirmation message displays, click **Yes**.



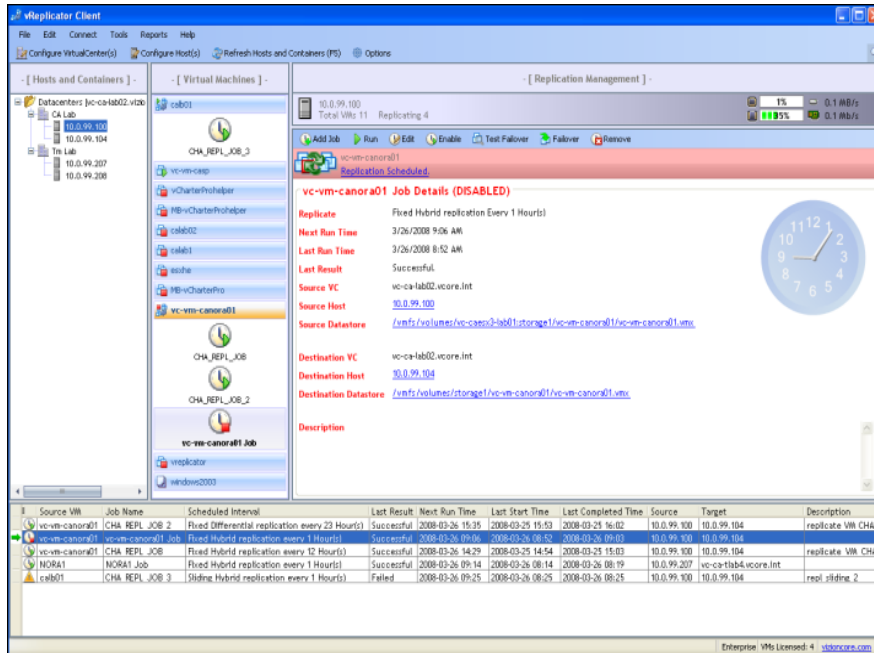
8. Once the process is complete, the VM will remain disabled but have a status of *Successful* in the Last Result field of the Replication Management pane and Replication Log.

Failover

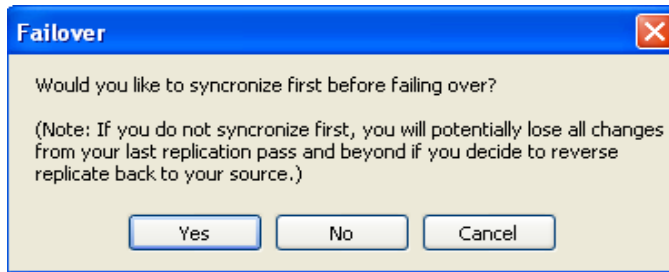
Before you initiate a failover, you must disable the replication job. If you do not, an error message will display.

Note: During this process, you will be prompted to synchronize. If you select *Yes*, the failover pass will replicate before the destination VM is turned on. If you select *No*, the destination VM will be turned on with no replication. Selecting *Cancel* will prompt no action.

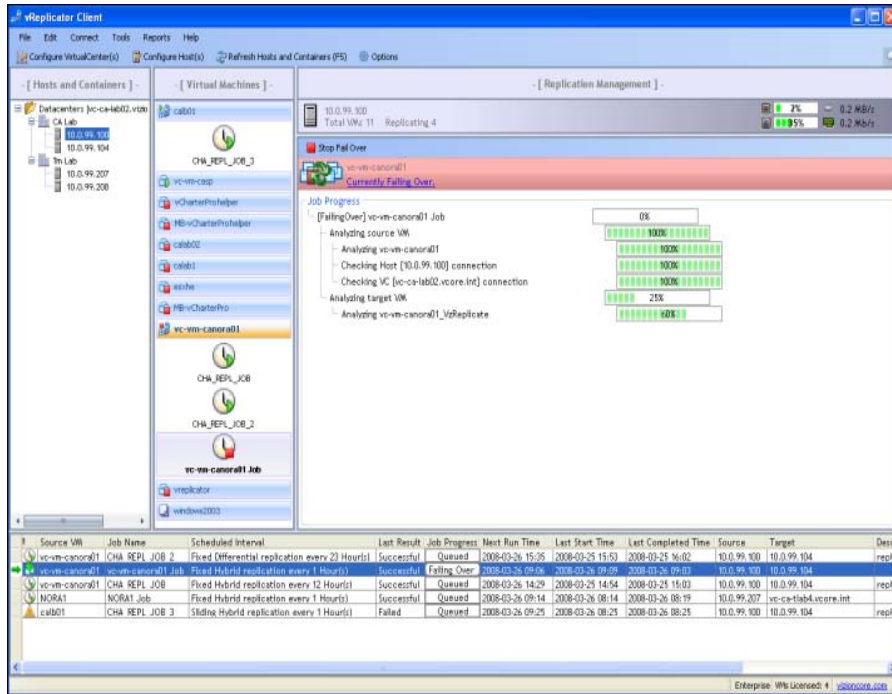
1. In the Virtual Machines pane, navigate to the replication job that you want to disable.
Details about the job display in the Replication Management pane.
2. From the Toolbar, click the *Disable* icon.
A confirmation message displays.
3. Click **Yes**.
The vReplicator window refreshes. The job is disabled.



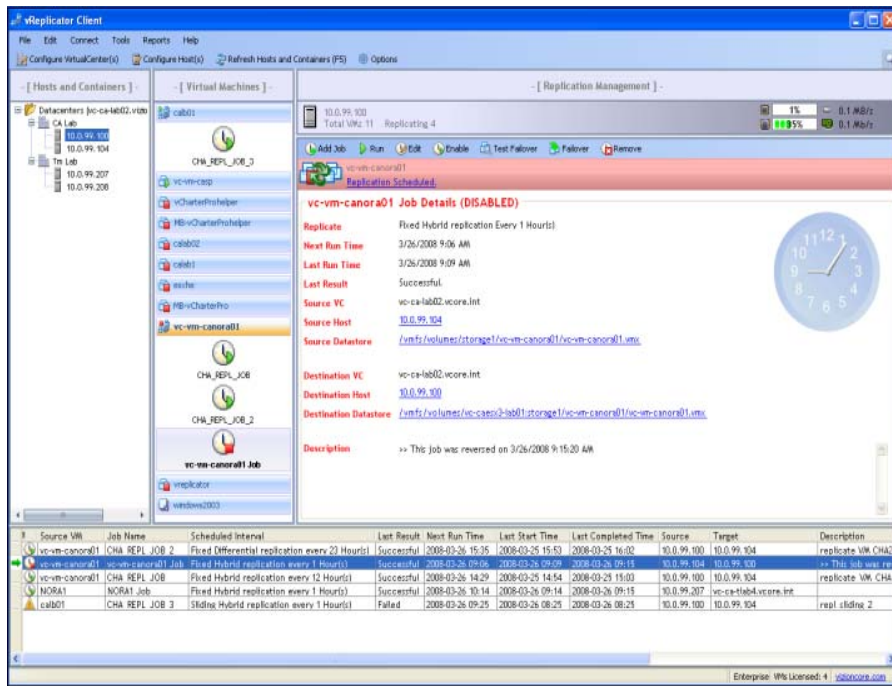
- Click the *Failover* icon.
A confirmation message displays.



- Click **Yes**.
The failover process begins. In the Replication management pane, *Currently Failing Over* displays in the Toolbar. In the Replication Log, the Job Progress column has a *Failing Over* status.



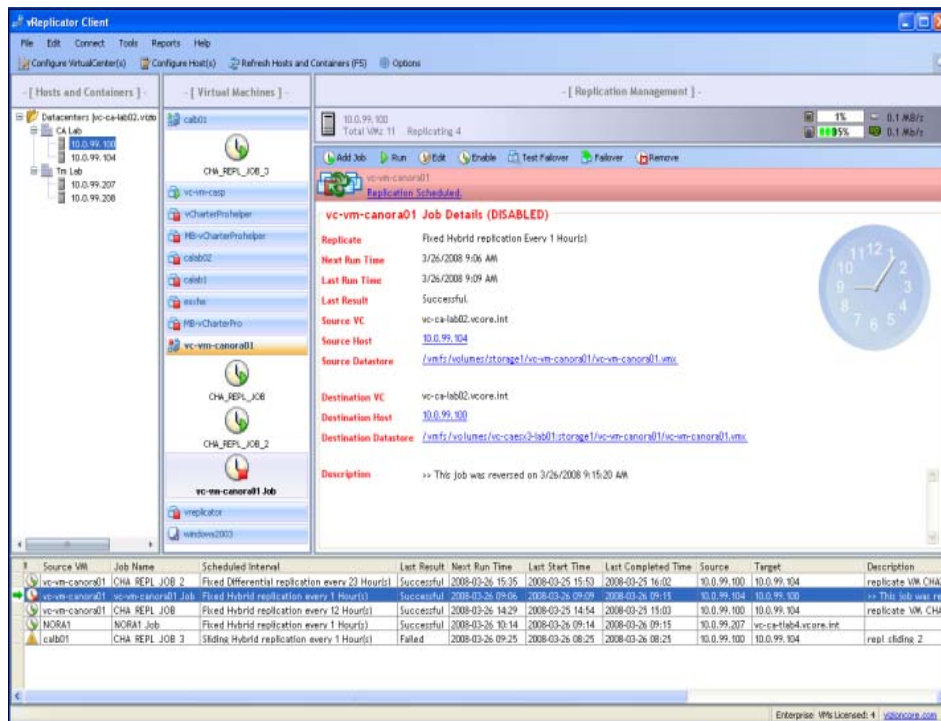
- When the failover completes, *Replication Scheduled* displays in the Toolbar. The Last Result field has a status of *Successful* in the Replication Log and Replication Management pane. The Description field indicates that the job was reversed at a specific date and time.



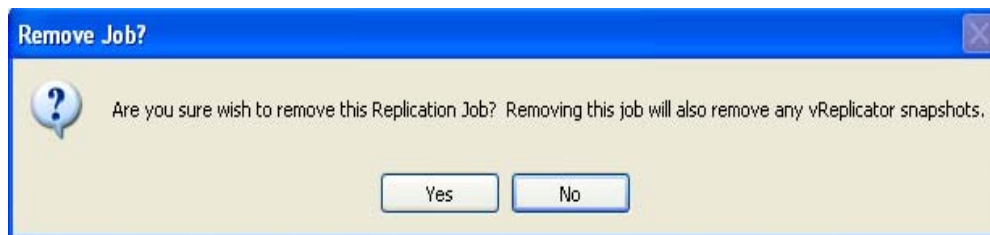
Remove Replication Job

Before you attempt to remove a replication job, you must disable it. If you do not, an error message will display.

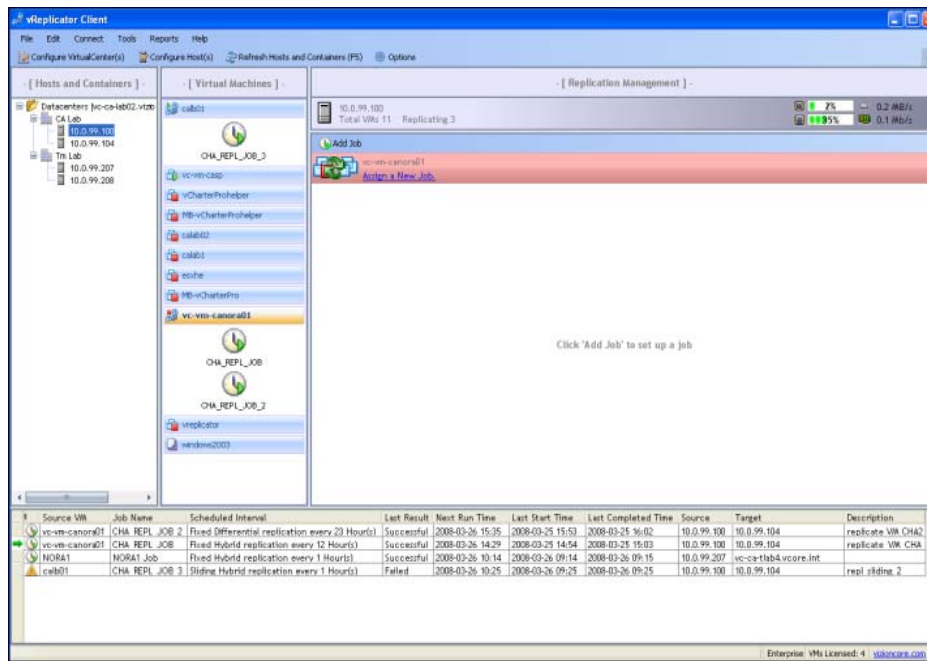
1. In the Virtual Machines pane, navigate to the replication job that you want to disable.
Details about the job display in the Replication Management pane.
2. From the Toolbar, click the *Disable* icon.
A confirmation message displays.
3. Click **Yes**.
The vReplicator window refreshes. The job is disabled.



4. Click the *Remove* icon.
A confirmation message displays.



- Click **Yes**.
The replication job is deleted from the system and no longer displays on the vReplicator window.



Datastore Summaries

Through the Tools menu on the vReplicator window, you can access the Datastore Summary dialog. It lists all of the VCs and hosts available in the application. At the top of the screen, there is a Threshold field with settings for percentage and GB. You can change the criteria in this field and immediately update the data that displays on the dialog.

The Datastore Summary window includes:

- The datastores assigned to each host.
- The total space available on each datastore.
- The actual space available.
- The percentage of free space.

Threshold (spin box)	This field is auto-populated based on the value entered in the Warn me when storage has gone below field on the Alerts tab of the Options dialog. The default is 10. Within a range from 1 through 100, you can set this spin box with a value that corresponds to a percentage or GB. When disk space moves below the threshold that you define, a warning message will display on the Replication Management pane and an alert will be sent to the recipient listed on the Alerts tab of the Options dialog.
% (radio button)	Select this radio button to set the threshold using percentage as the unit of measure. This field is auto-populated based on whether the % radio button was selected on the Alerts tab of the Options dialog. By default, this radio button is selected.
GB (radio button)	Select this radio button to set the threshold using GB as the unit of measure. This field is auto-populated based on whether the GB radio button was selected on the Alerts tab of the Options dialog.
Datastores under threshold	This field is auto-populated based on the total number of datastores available that are currently under the threshold established on this dialog. This field is disabled.
Total Datastores	This field is auto-populated based on the total number of datastores available. This field is disabled.

vReplicator::Datastore Summary

Datastore Summary Threshold % GB

Datstores under threshold: 0
Total Datstores: 2

Datastore	Free Space	Total Space	Percent Free
- Host : 10.0.99.207 - 1 Datastore(s)			
VC-CA-TLAB-3A	400.07 GB free	536.75 GB total	74.54 % free
- Host : 10.0.99.208 - 1 Datastore(s)			
vc-ca-tlab-4a	482.70 GB free	536.75 GB total	89.93 % free

vReplicator::Datastore Summary

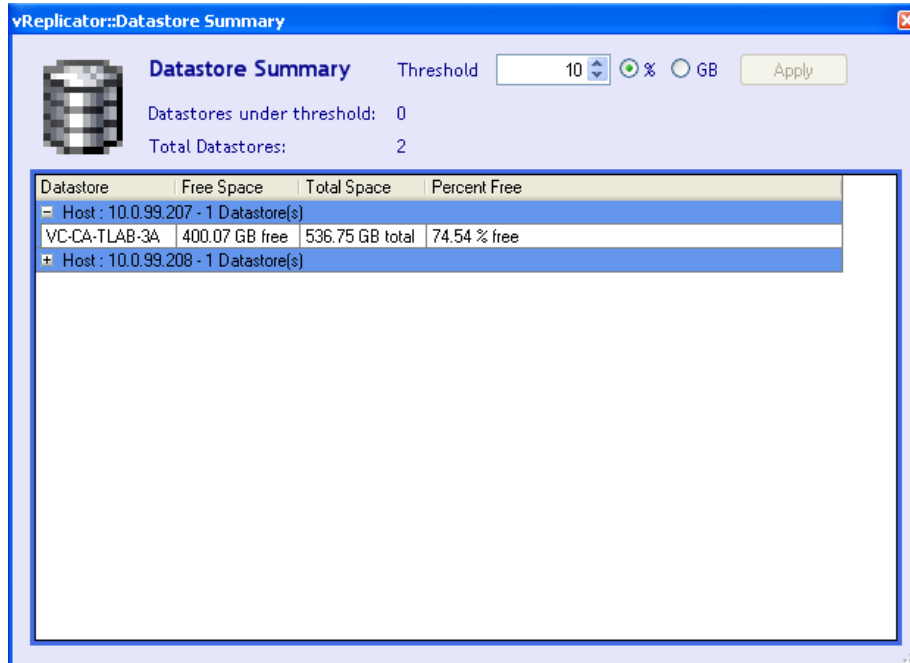
Datastore Summary Threshold % GB

Datstores under threshold: 2
Total Datstores: 2

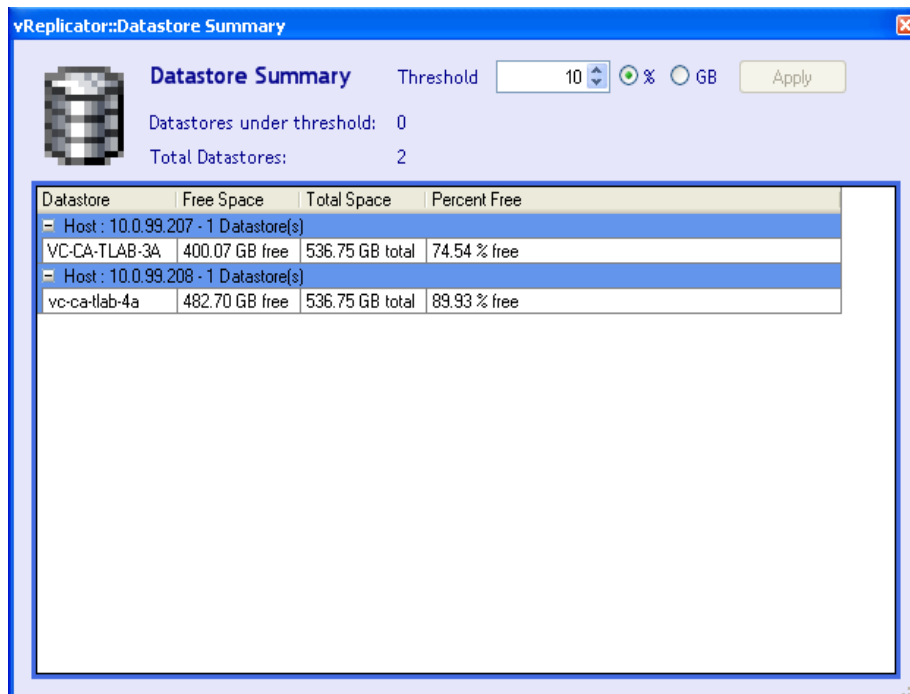
Datastore	Free Space	Total Space	Percent Free
- Host : 10.0.99.207 - 1 Datastore(s)			
VC-CA-TLAB-3A	400.07 GB free	536.75 GB total	74.54 % free
- Host : 10.0.99.208 - 1 Datastore(s)			
vc-ca-tlab-4a	482.70 GB free	536.75 GB total	89.93 % free

View Storage Summary

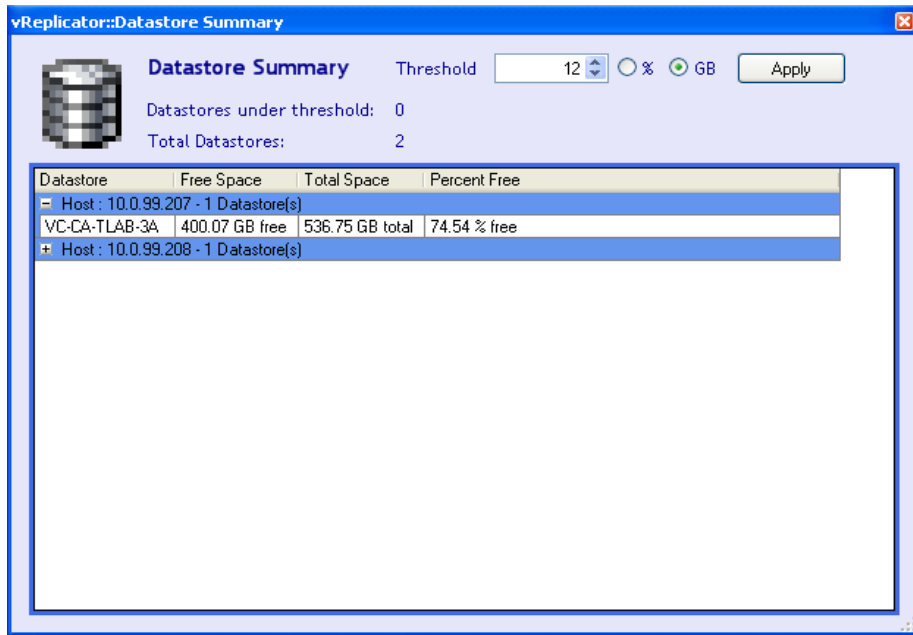
1. On the vReplicator window, select **Tools**→**Datastore Summary**. The Datastore Summary dialog displays.



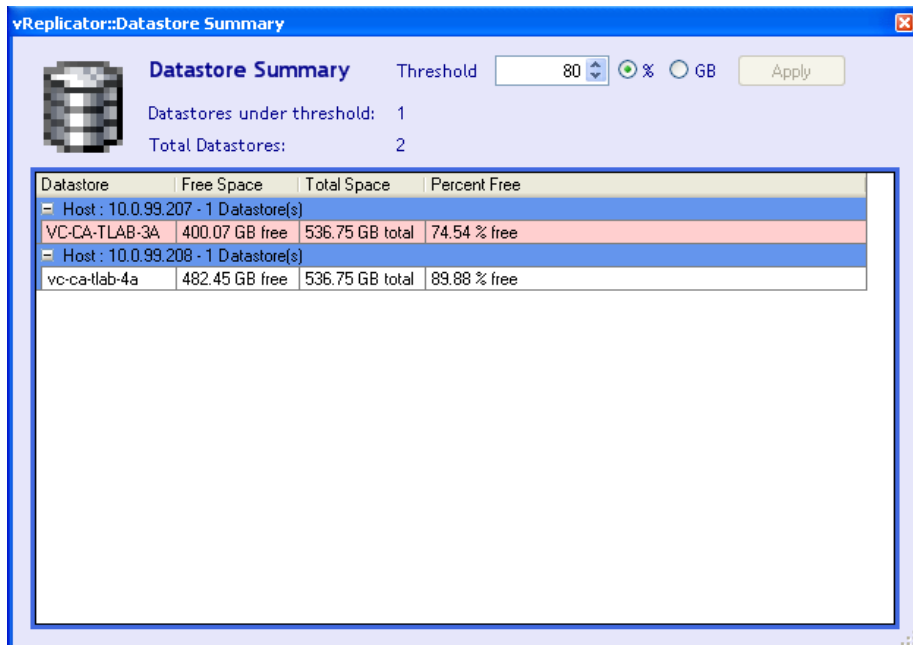
2. To expand the view, click on an entry that features a plus sign (+).



- When you change the threshold settings, the Apply button is enabled. To increase or decrease the threshold, adjust the corresponding spin box. To change the threshold unit of measure criterion, select a radio button—% or **GB**. Click **Apply**.



- When you make a change to either threshold criteria, the data on the dialog updates immediately. In this case, the number of datastores under threshold increases and the VCs impacted by the change display in red.




Event Viewer

The Event Viewer is an administrative tool available through the Microsoft Management Console (MMC). You can access the Event Viewer window to monitor vReplicator events that are detailed on application, security, and system logs. The left pane of the window features the console tree. The right pane contains the log files and other detailed information for objects within the tree. The window features a Menu Bar and a Toolbar.

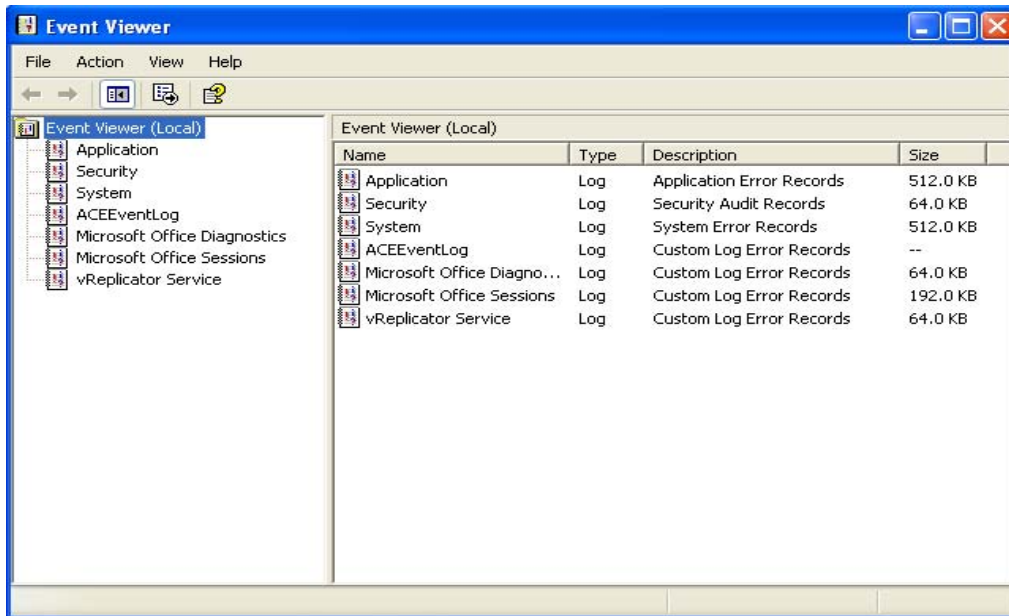
You can access the Event Viewer window through the Tools menu on the vReplicator window. From within the Details view of the Replication Management pane, you can display the Event Viewer window by clicking the Open Event Log link in the Last Status field.

repl_job_nm Details

Replicate	Fixed Snapshot Rotation Every 12 Hour(s)
Next Run Time	3/12/2008 5:10 PM
Last Run Time	3/11/2008 5:09 AM
Last Result	Failed. Open Event Log
Source VC	10.0.99.21
Source Host	10.0.99.207
Source Datastore	/vmfs/volumes/VC-CA-TLAB-3A/NORA2/NORA2.vmx
Destination VC	10.0.99.21
Destination Host	10.0.99.208
Destination Datastore	/vmfs/volumes/vc-ca-tlab-4a/NORA2/NORA2.vmx
Description	replicate cha

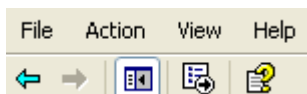


For additional information on how to use the logs to manage events, access Help→About Event Viewer on the Event Viewer window.

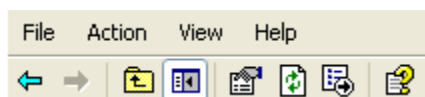


Event Viewer Menu Bar and Toolbars





When the Event Viewer node is selected in the console tree, this Menu Bar and Toolbar display on the Event Viewer window.



If you select a log category node in the console tree, a slightly different Toolbar displays on the Event Viewer window.

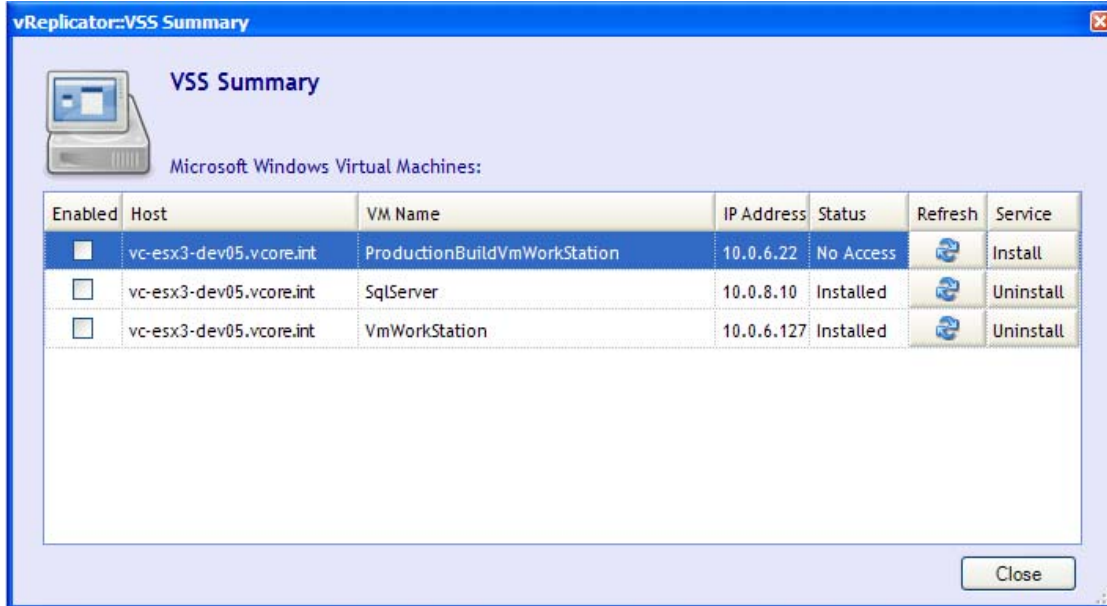


File	<p>Whether the Event Viewer or a log category node is selected in the console tree, this menu offer access to two submenus—Options and Exit. If you select Options, you will access a Disk Cleanup window. Here you can view the amount of disk space that is taken up for console changes storage. There is a Delete Files button that you can use to permanently delete the files that store all console changes. Selecting Exit closes the Event Viewer window.</p>
Action	<p>If the Event Viewer node is selected in the console tree, this menu offers access to these commands:</p> <ul style="list-style-type: none"> • Connect to another computer • Open Log File • Export List • Help <p>If you select a log category node in the console tree, this menu offers access to these commands:</p> <ul style="list-style-type: none"> • Open Log File • Save Log File As • New Log View • Clear all Events • Rename • Refresh • Export List • Properties • Help

View	<p>If the Event Viewer node selected in the console tree, this menu offers access to these commands:</p> <ul style="list-style-type: none"> • Add\Remove Columns • Customize <p>If you select a log category node in the console tree, this menu offers access to these commands:</p> <ul style="list-style-type: none"> • Add\Remove Columns • All Records • Filter • Newest First • Oldest First • Find • Customize
Help	<p>Whether you select the Event Viewer or a log category node in the console tree, this menu offer access to three submenus—Help Topics, About Microsoft Management Console, and About Event Viewer.</p>
	<p>Back and Forward Arrows</p>
	<p>Show/Hide Console Tree: Clicking this icon toggles the left pane of the Event Viewer window.</p>
	<p>Export List: Click this icon to access the Export List dialog.</p>
	<p>Help: Click this icon to open MMC online help for Event Viewer.</p>

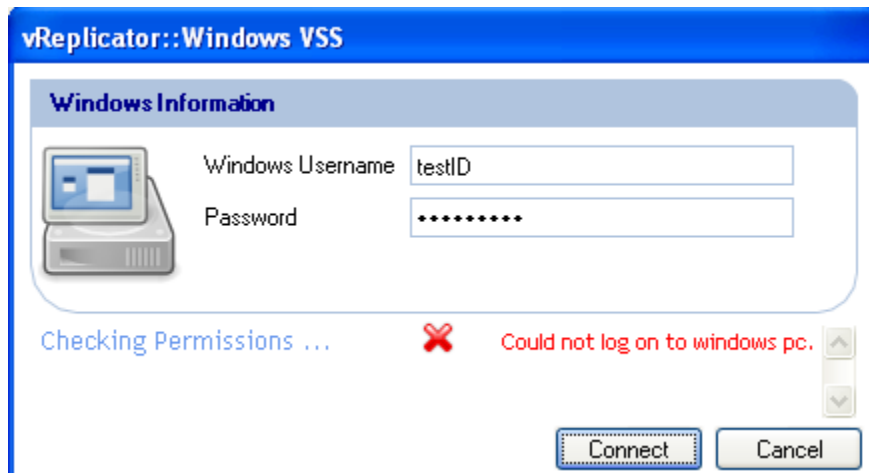
VSS Options

The VSS Summary window features information about all of the VMs that are configured for vReplicator.



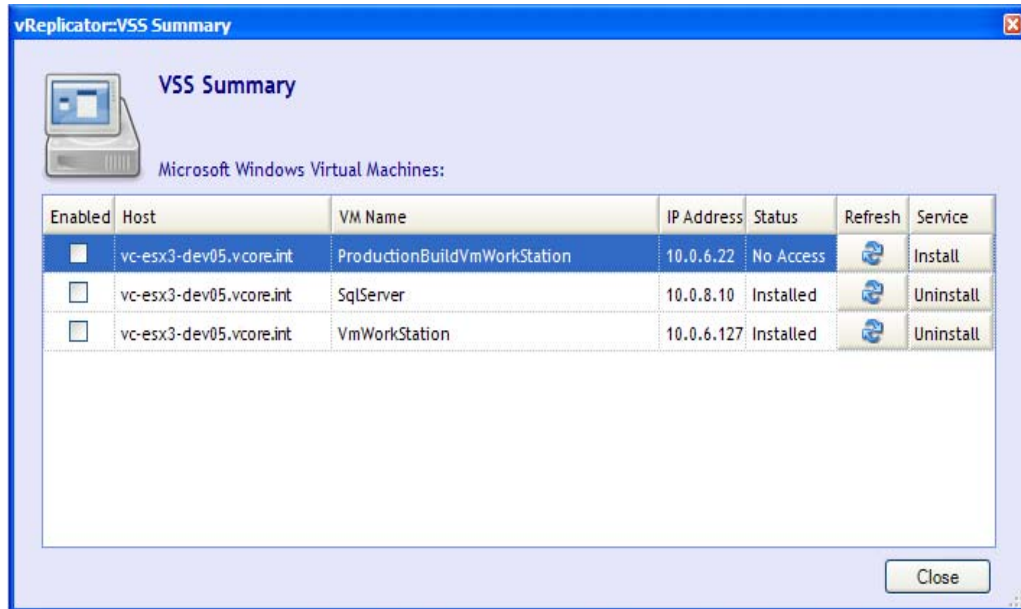
Host	The name of the host on which the VM resides is listed here.
VM Name	This column contains the VM name as it displays in the Virtual Machines pane of the vReplicator window.
IP Address	Refers to the IP address associated with the VM listed.
Enabled	This column features checkboxes that correspond to the VMs listed. By default, the checkboxes are not selected.
Status	Four values can display in the Status column—Installed, Not Installed, Querying, and No Access. When a VM's status is <i>Not Installed</i> , the column is active. That is, you can click the swirl icon next to the status to request a status update. While this process is completing, <i>Not Installed</i> will change to <i>Querying</i> . If the status returns to <i>Not Installed</i> , you can click within the Service column to start the installation.
Service	The Service column is active if <i>Install</i> is listed in it. This means that you can click within it to start the installation process for that VM.

Note: To update a VM's status through this window, you must have SA privileges on the Windows domain or workgroup environment. If you enter a user name and password that do not have appropriate access, this message will display:

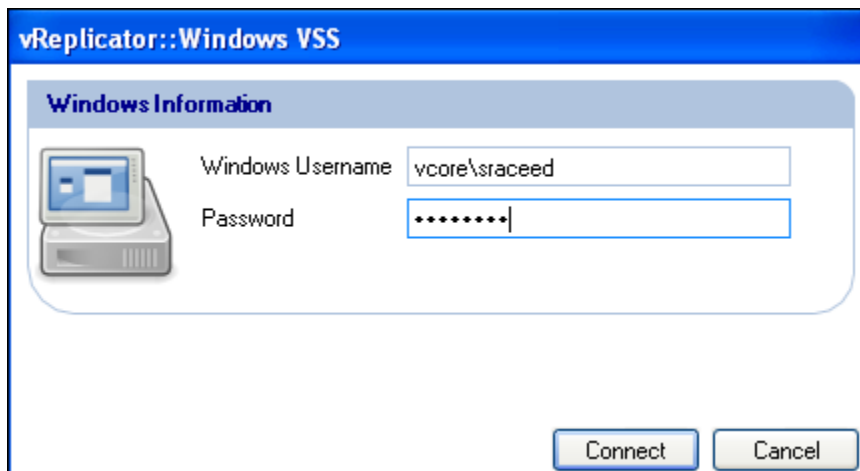


Install Vizioncore VSS Agent

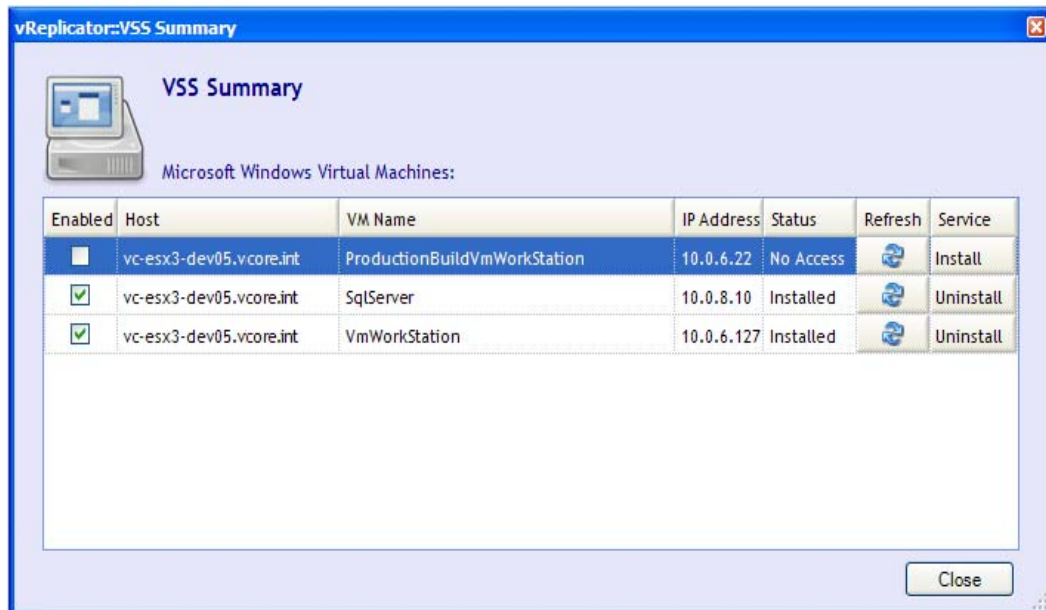
1. On the vReplicator window, select **Tools**→**VSS Options**.
The VSS Summary window displays.



2. In the IP Address column for the VM that you configured, enter the IP address of the VSS server.
3. Within the Service column for that VM, click *Install*.
The Windows VSS dialog displays.
4. In the Windows Username field, enter: (domain name)\(your username). In the password field, enter the password that corresponds to your username. Click **Connect**.

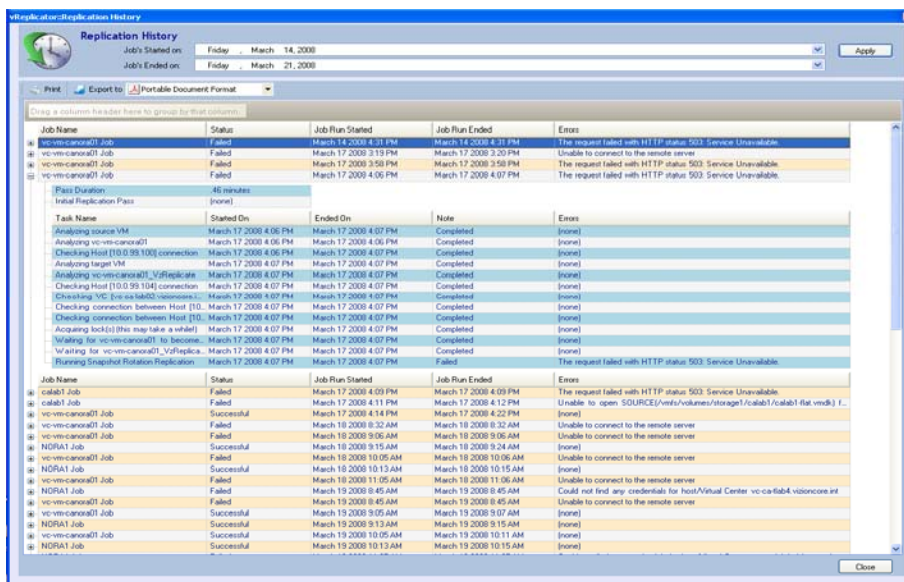
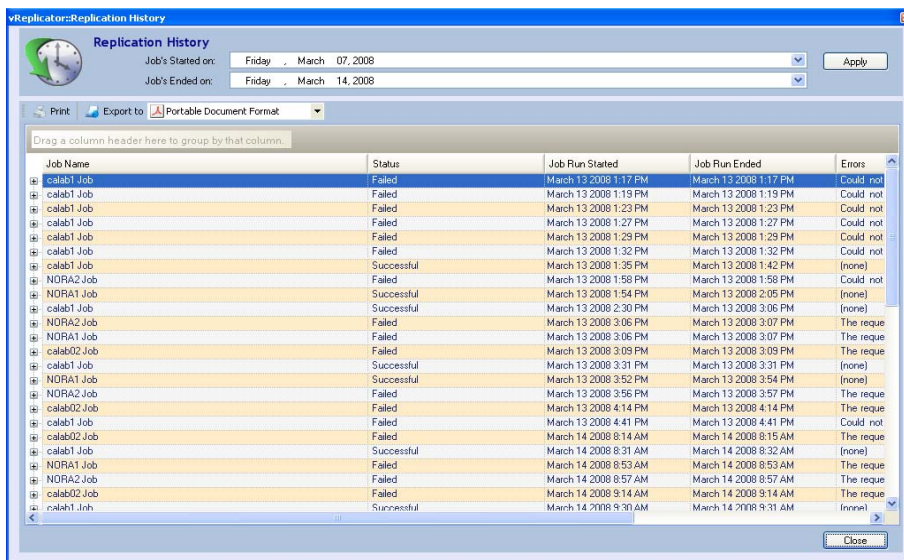


5. Select the **Enabled** checkbox for the VM that you configured. The Service column has a setting of *Uninstall*. The Vizioncore VSS agent is installed.


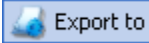


Reports

vReplicator features a reporting function that allows you to view job information through the interface as well as export it to several file formats—PDF, XML, and MS Excel. The Replication History window contains status and timeframe information for each job. It also features an Errors column that offers a brief description of any problems encountered during replication. The columns on the Replication History window are sortable. Jobs are organized within a tree structure. You can access more detailed data about an entry by clicking the listing's plus sign (+). This data includes the duration of the replication pass as well as specific tasks associated with the job, such as checking host and VC connections, analyzing target VMs, and completing snapshots.



Replication History Window

Job's Started On (dropdown)	Click within this dropdown to access a calendar from which to select a start date for the replication jobs that will make up the report. The default is one week prior to the current date.
Job's Ended On (dropdown)	Click within this dropdown to access a calendar from which to select an end date for the replication jobs that will make up the report. The default is the current date.
	Print: Click this icon to access the vReplicator History Print Preview window. Within this window you can navigate the contents of a report and print it.
	The Export to icon is adjacent to the unlabeled file format dropdown. After you select a format from the dropdown, click the icon to access the Save As dialog. On this dialog, you can select a location to which the file should be exported and enter a name for the report.
Unlabeled file format (dropdown)	<p>Features file format options for exporting the Replication History report:</p> <ul style="list-style-type: none"> • Portable Document Format • XML Paper Specification • Excel Worksheet
Unlabeled (main pane)	<p>The main pane of the window displays the contents of the reports in these columns:</p> <p>Job Name: The name of the replication job. You entered this through the Options dialog.</p> <p>Status: The status of the job—Successful, Failed.</p> <p>Job Run Started: Indicates the date and time that the replication was initiated.</p> <p>Job Run Ended: Indicates the date and time that the replication completed.</p> <p>Errors: Includes a summary of any errors that occurred during replication. Otherwise, the value in the column is (None).</p> <p>When a replication job entry is expanded, these columns display in the report:</p> <p>Task Name: Refers to a specific task associated with a replication job; for example, Analyzing Target VM.</p> <p>Started On: The date and time that the task was initiated.</p> <p>Ended On: The date and time that the task completed.</p>

	<p>Note: The values in this column indicate whether a specific task completed or failed.</p> <p>Errors: Lists any issues that occurred during the execution of a task; for example—The request failed with HTTP status 503: Service Unavailable.</p>
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Replicator History Print Preview Window

This window displays when you click the Print icon on the Replication History window. It is made up of these areas:

- Menu Bar
- Toolbar
- Navigation Pane
- Report Preview Pane
- Status Bar

The Navigation pane contains thumbnails of every page in the report. You can work within this pane to move easily throughout the report. The Report Preview pane features the entire report as a single, cohesive document. You can scroll to reduce the width of the Navigation pane in order to maximize the Report Preview pane. The Status Bar contains pagination information. The options and commands that make up the Menu Bar and Toolbar are listed below.








Menu Bar







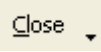




File	<ul style="list-style-type: none"> • Print • Page Setup • Exit
View	<ul style="list-style-type: none"> • Thumbnails • Zoom In • Zoom Out • Zoom • Page Width • Margin Width • Whole Page • Go To (First Page, Previous Page, Next Page, Last Page, Previous View, Next View)





Tools	<ul style="list-style-type: none"> • Hand Tool • Snapshot Tool • Dynamic Zoom Tool • Zoom In Tool • Zoom Out Tool
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Toolbar



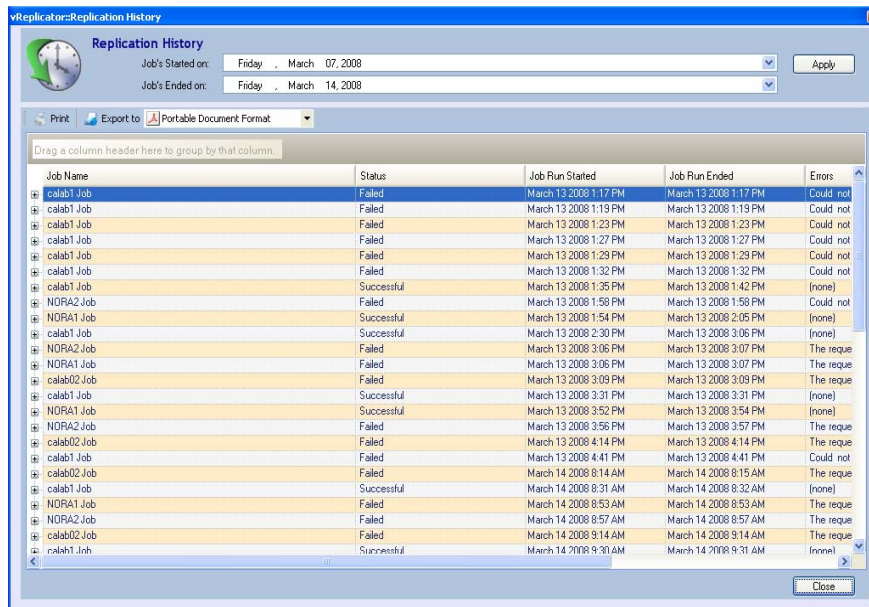
	Print
	Hand Tool
	Snapshot Tool
	Dynamic Zoom Tool
	Zoom Out Tool
	Zoom In Tool
	Page Width

	Margin Width
	Whole Page
	Zoom Out
	Zoom
	Zoom In
	Page Layout
	Close Preview: Standard and Customize
	First Page
	Previous Page
	Current Page
	Next Page

	Last Page
	Previous View
	Next View
	Toolbar Options: View and Customize

Compile Replication History Report

1. On the vReplicator window, select **Reports**→**Replication History**. The Replication History window displays.



2. From the Job's Started on dropdown, select a start date for the timeframe covering the replication jobs for this report.
3. From the Job's Ended on dropdown, select an end date for the timeframe covering the replication jobs for this report. Click **Apply**.

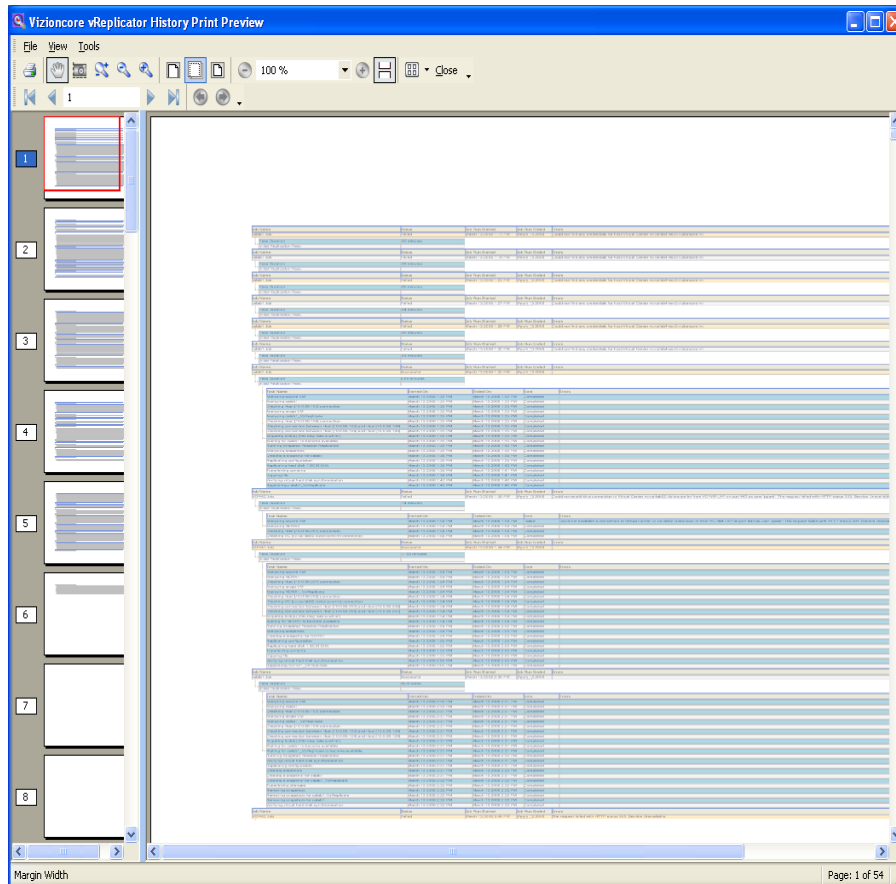
The view refreshes to include information on the jobs run within the date range that you selected.

The screenshot shows the 'vReplicator: Replication History' window. At the top, there are date range selectors for 'Job's Started on:' (Tuesday, March 11, 2008) and 'Job's Ended on:' (Thursday, March 13, 2008). Below these are 'Print' and 'Export to' buttons (set to Portable Document Format). A table below displays the replication history with columns for Job Name, Status, Job Run Started, Job Run Ended, and Errors. The table contains 20 rows of data, including job names like 'calab1 Job', 'NORA2 Job', and 'NORA1 Job', with their respective statuses and error messages.

Job Name	Status	Job Run Started	Job Run Ended	Errors
calab1 Job	Failed	March 13 2008 1:17 PM	March 13 2008 1:17 PM	Could not find any credentials for host/virtual Center vc-calab4-esx3.vizioncore.int
calab1 Job	Failed	March 13 2008 1:19 PM	March 13 2008 1:19 PM	Could not find any credentials for host/virtual Center vc-calab4-esx3.vizioncore.int
calab1 Job	Failed	March 13 2008 1:23 PM	March 13 2008 1:23 PM	Could not find any credentials for host/virtual Center vc-calab4-esx3.vizioncore.int
calab1 Job	Failed	March 13 2008 1:27 PM	March 13 2008 1:27 PM	Could not find any credentials for host/virtual Center vc-calab4-esx3.vizioncore.int
calab1 Job	Failed	March 13 2008 1:29 PM	March 13 2008 1:29 PM	Could not find any credentials for host/virtual Center vc-calab4-esx3.vizioncore.int
calab1 Job	Failed	March 13 2008 1:32 PM	March 13 2008 1:32 PM	Could not find any credentials for host/virtual Center vc-calab4-esx3.vizioncore.int
calab1 Job	Successful	March 13 2008 1:35 PM	March 13 2008 1:42 PM	(none)
NORA2 Job	Failed	March 13 2008 1:58 PM	March 13 2008 1:58 PM	Could not establish a connection to Virtual Center vc-ca-lab02.vizioncore.int from VCN.
NORA1 Job	Successful	March 13 2008 1:54 PM	March 13 2008 2:05 PM	(none)
calab1 Job	Successful	March 13 2008 2:30 PM	March 13 2008 3:06 PM	(none)
NORA2 Job	Failed	March 13 2008 3:06 PM	March 13 2008 3:07 PM	The request failed with HTTP status 503: Service Unavailable.
NORA1 Job	Failed	March 13 2008 3:06 PM	March 13 2008 3:07 PM	The request failed with HTTP status 503: Service Unavailable.
calab02 Job	Failed	March 13 2008 3:09 PM	March 13 2008 3:09 PM	The request failed with HTTP status 503: Service Unavailable.
calab1 Job	Successful	March 13 2008 3:31 PM	March 13 2008 3:31 PM	(none)
NORA1 Job	Successful	March 13 2008 3:52 PM	March 13 2008 3:54 PM	(none)
NORA2 Job	Failed	March 13 2008 3:56 PM	March 13 2008 3:57 PM	The request failed with HTTP status 503: Service Unavailable.
calab02 Job	Failed	March 13 2008 4:14 PM	March 13 2008 4:14 PM	The request failed with HTTP status 503: Service Unavailable.
calab1 Job	Failed	March 13 2008 4:41 PM	March 13 2008 4:41 PM	Could not find any credentials for host/virtual Center vc-calab4-esx3.vizioncore.int

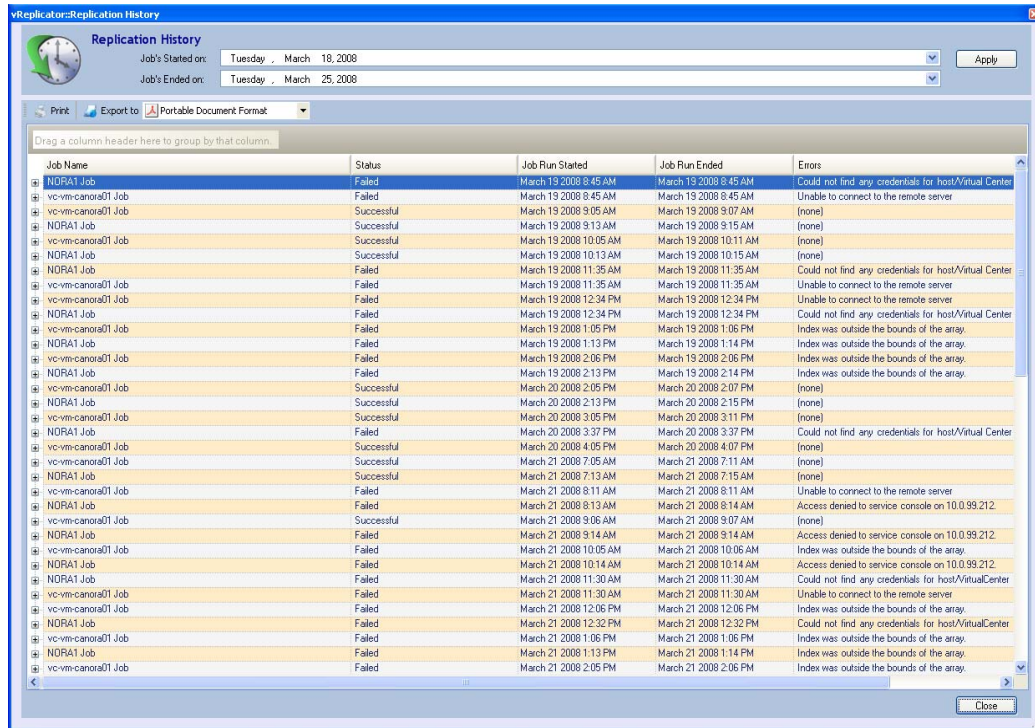
Print Replication History Report

1. On the vReplicator window, select **Reports**→**Replication History**.
The Replication History window displays.
2. Compile a report using the instructions listed above.
3. Click the *Print* icon.
The vReplicator History Print Preview window displays.

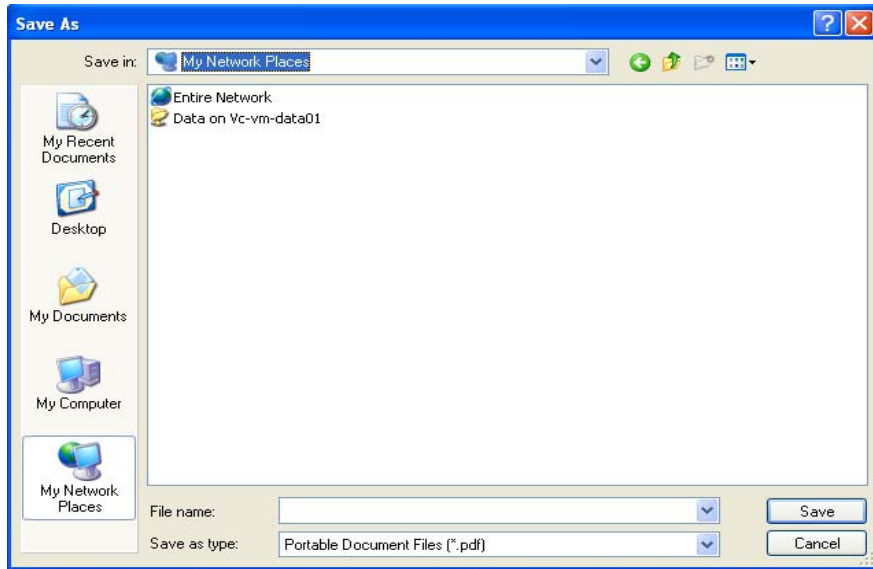


Export Replication History Report to PDF

1. On the vReplicator window, select **Reports**→**Replication History**. The Replication History window displays.
2. Compile a report using the instructions listed above.



3. From the Export to dropdown, select **Portable Document Format**. Click the *Export to* icon. The Save As dialog displays. *Portable Document Format (*.pdf)* displays in the Save as type dropdown.



4. From the Save in dropdown, select a location to which to export the file.
5. In the File name field, enter a name for the report.
6. Click **Save**.
The report displays in PDF.

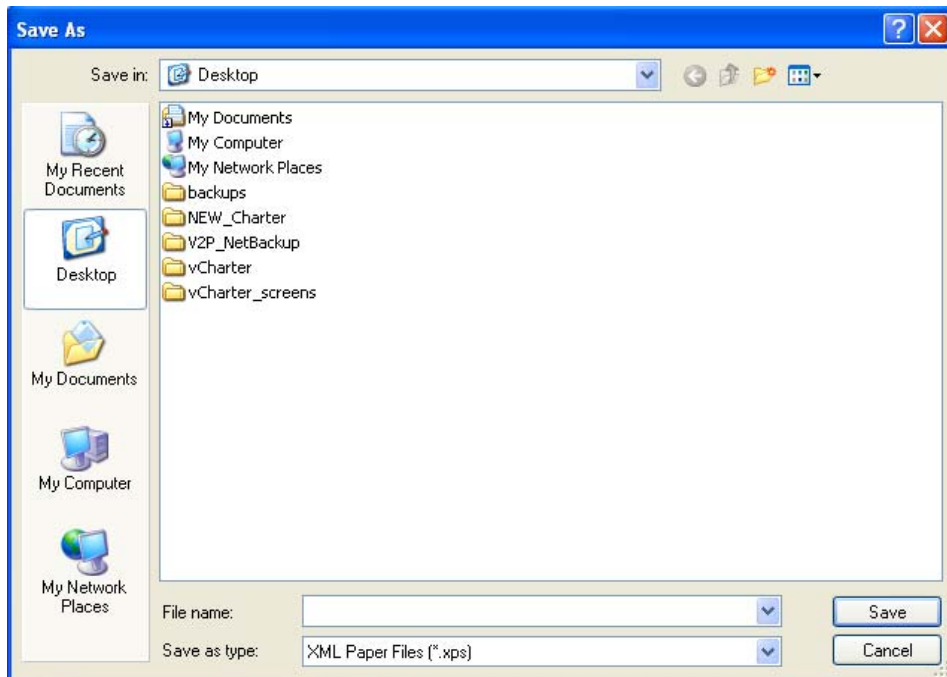
Job Name	Status	Job Run Started	Job Run Ended	Errors
NORAI Job	Failed	March 19 2008 8:45 AM	March 19 2008 8:45 AM	Could not find any credentials for host/Virtual Center
Pass Duration	02 minutes			
Initial Replication Pass				
Job Name	Status	Job Run Started	Job Run Ended	Errors
vo-vm-canon01 Job	Failed	March 19 2008 8:45 AM	March 19 2008 8:45 AM	Unable to connect to the remote server
Pass Duration	02 minutes			
Initial Replication Pass				
Task Name	Started On	Ended On	Note	Errors
Analyzing source VM	March 19 2008 8:45 AM	March 19 2008 8:45 AM	Failed	Unable to connect to the remote server
Job Name	Status	Job Run Started	Job Run Ended	Errors
vo-vm-canon01 Job	Successful	March 19 2008 9:05 AM	March 19 2008 9:07 AM	
Pass Duration	1.13 minutes			
Initial Replication Pass				
Task Name	Started On	Ended On	Note	Errors
Analyzing source VM	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Analyzing vo-vm-canon01	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Checking Host [10.0.99.100] connection	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Analyzing target VM	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Analyzing vo-vm-canon01_VaReplicate	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Checking Host [10.0.99.104] connection	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Checking VC [vc-cs-lab02.visioncore.int] connection	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Checking connection between Host [10.0.99.100] and Host [10.0.99.104]	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Checking connection between Host [10.0.99.104] and Host [10.0.99.100]	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Acquiring lock(s) (this may take a while)	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Waiting for vo-vm-canon01 to become available	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Waiting for vo-vm-canon01_VaReplicate to become available	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Running Snapshot Rotation Replication	March 19 2008 9:06 AM	March 19 2008 9:07 AM	Completed	
Verifying virtual hard disk synchronization	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Replicating configuration	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Creating snapshots	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Creating a snapshot for vo-vm-canon01	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Creating a snapshot for vo-vm-canon01_VaReplicate	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Transferring changes	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Removing snapshots	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Removing snapshots for vo-vm-canon01_VaReplicate	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Reverting snapshots for vo-vm-canon01	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Reverting snapshots for vo-vm-canon01	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Removing snapshots for vo-vm-canon01	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Removing snapshots for vo-vm-canon01	March 19 2008 9:06 AM	March 19 2008 9:06 AM	Completed	
Verifying virtual hard disk synchronization	March 19 2008 9:07 AM	March 19 2008 9:07 AM	Completed	

7. Minimize the report. Navigate to the location to which you exported it and confirm that the process completed. For example, if you exported to your desktop, an icon similar to this one will display:



Export Replication History Report to XML

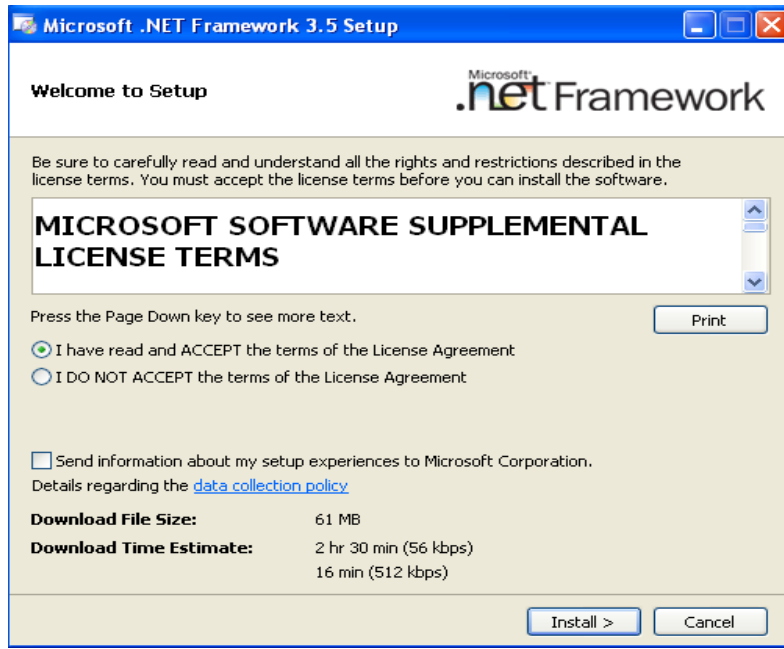
1. On the vReplicator window, select **Reports**→**Replication History**. The Replication History window displays.
2. Compile a report using the instructions listed above.
3. From the Export to dropdown, select **XML Paper Specification**. Click the *Export to* icon. The Save As dialog displays. *XML Paper Files (*.xps)* displays in the Save as type dropdown.



4. From the Save in dropdown, select a location to which to export the file.
5. In the File name field, enter a name for the report.

6. Click **Save**.
The report displays in XPS.

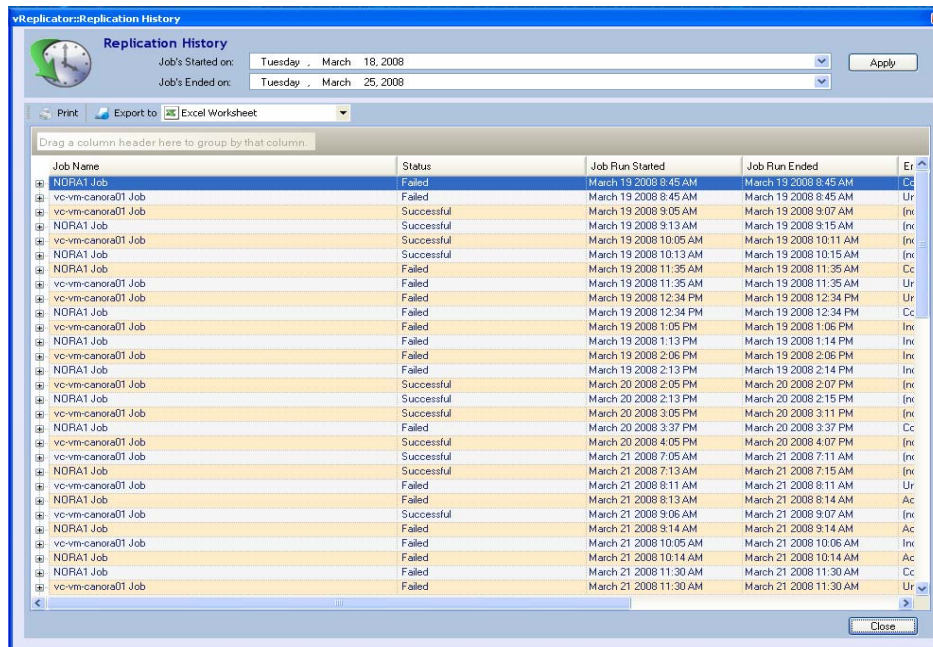
Note: If you do not have .NET Framework installed, you will be prompted to install it before proceeding.



7. Minimize the report. Navigate to the location to which you exported it and confirm that the process completed.

Export Replication History Report to Excel

1. On the vReplicator window, select **Reports**→**Replication History**. The Replication History window displays.
2. Compile a report using the instructions listed above.
3. From the Export to dropdown, select **Excel Worksheet**.



4. Click the *Export to* icon.
The Save As dialog displays. *XLS Excel Files (*.xls)* displays in the Save as type dropdown.
5. Click **Save**.
The report displays in XLS.
6. Minimize the report. Navigate to the location to which you exported it and confirm that the process completed.

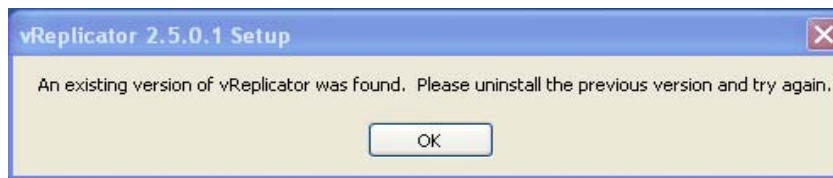
Appendix

Error Messages

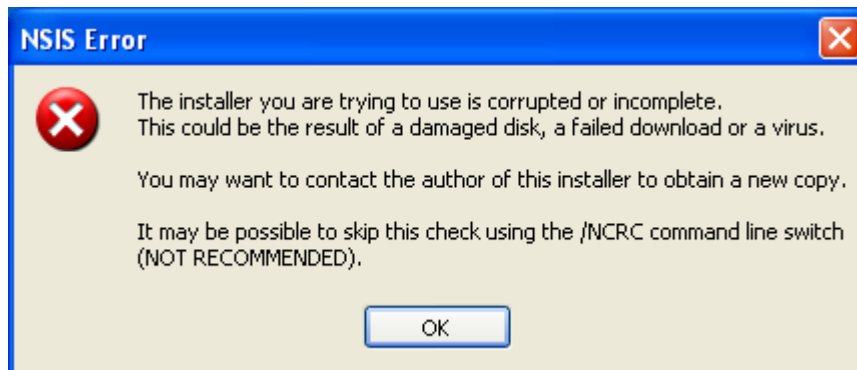
There are several categories of error message in vReplicator. In the sections below, the messages are classified by function.

Installation

- If you attempt a new installation of vReplicator when another version of the software exists on the same machine, this dialog displays:

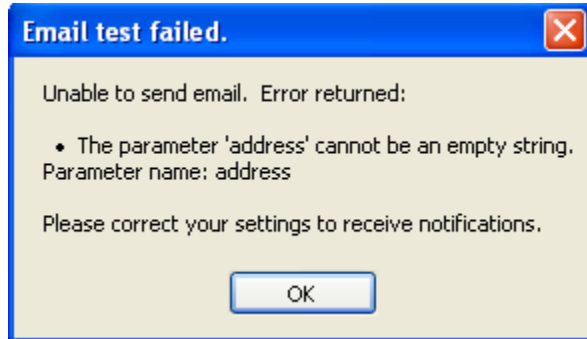


- This message could display if downloading the Installer file fails or if the file is incomplete or corrupted.

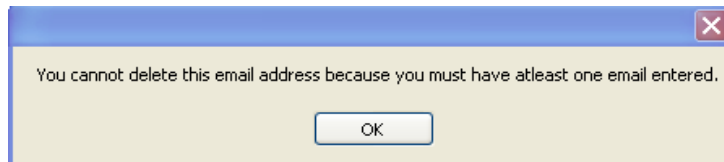


Notification

- If you do not enter a value in the From Email Address field on the Option dialog's Email tab, this error message will display:



- You can remove email addresses from the notification list on the Notification Recipients dialog. However, vReplicator requires that at least one email address remain in the system at all times. If you attempt to delete the only address on the list, this message will display:

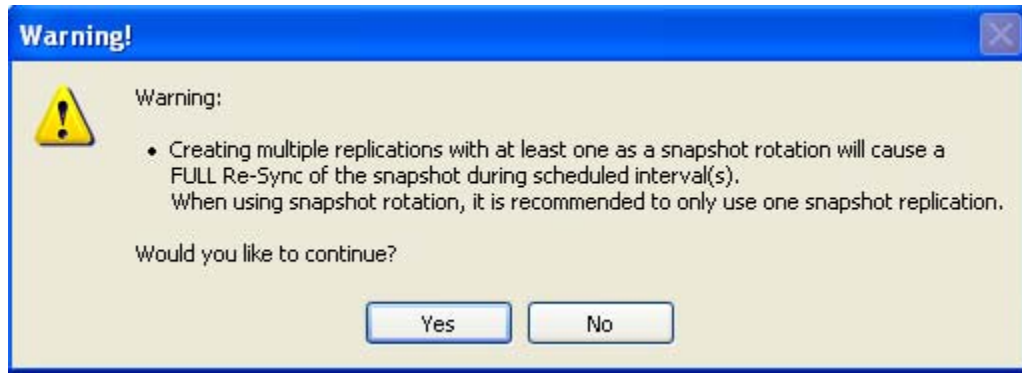




- Testing the email server connection is required. If you attempt to skip the test step, this error message will display after you set your options and click OK on the Resources tab:

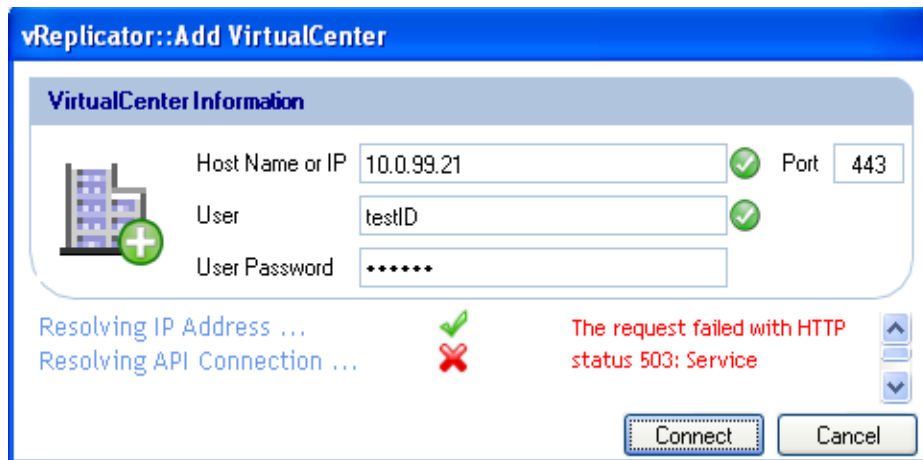


Configuration

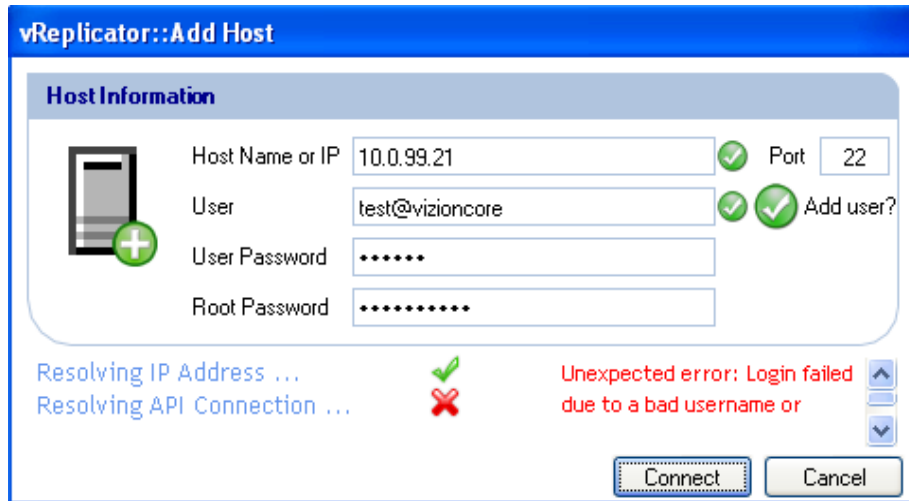
- If you create multiple jobs (including one hybrid replication) on a single source VM but select different destination VMs, the VMDKs for both jobs can get out of sync. In this scenario, this message displays:



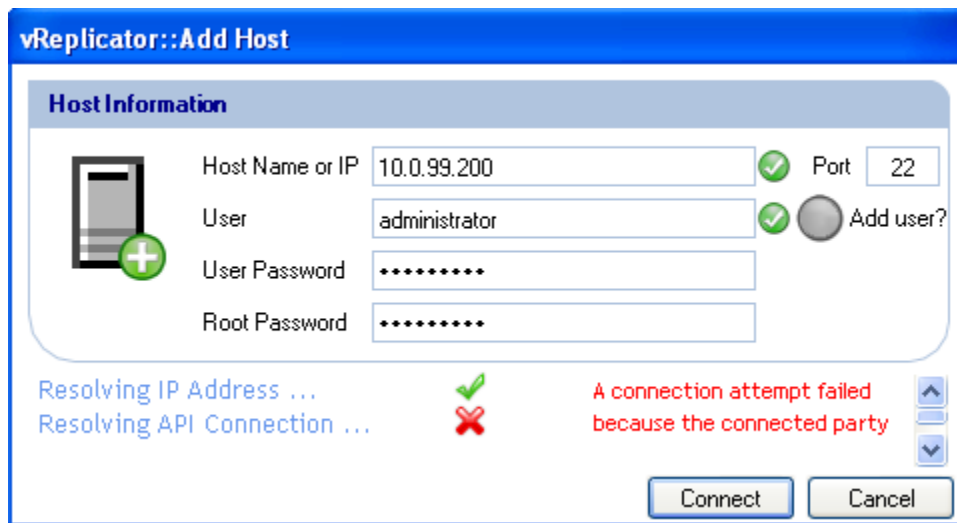
- The  icon displays to indicate that the two processes to be completed—Resolving IP Address and Resolving API Connection—were successful. A  icon will display in the event of an error in either or both processes. A message similar to this will display if either process fails:



- If you enter an invalid user ID, user password, or root password on the Add Host dialog, an error message will display for one or both of these processes: Resolving IP Address or Resolving API Connection.



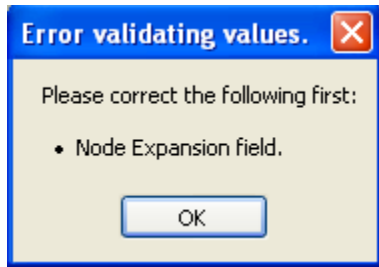
- An error message displays when the connection fails:




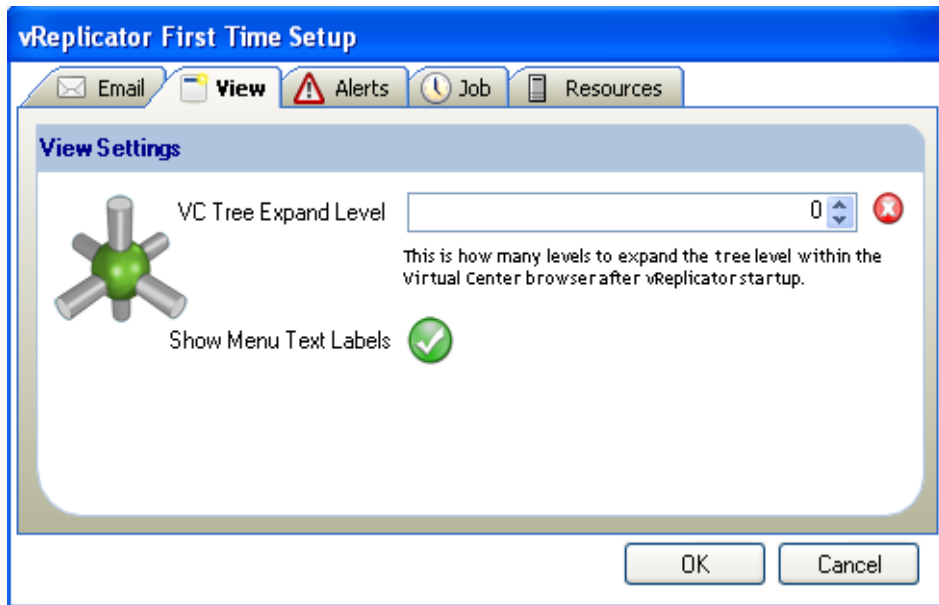
The message reads:

A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.

- After you complete the initial configuration and click OK on the First Time Setup dialog, vReplicator will detect any missing or invalid field values and alert you about them. This error message indicates that an invalid value was entered in the VC Tree Expand Level field on the View tab of the Options dialog.



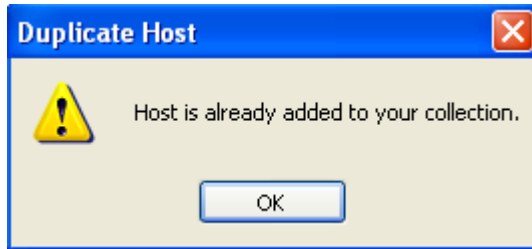
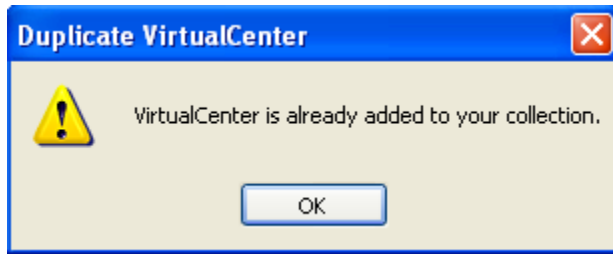
- In some cases, a field with an invalid value will feature a  icon.



- This error message might display at the bottom of the Hosts and Containers pane for a number of reasons, most of which are environmental in cause. A host might be down or there might be some other circumstance preventing vReplicator from communicating with the host. If this message displays, first click the Select Service button in the Hosts and Containers pane. If the message persists, run a test to confirm that VMware's client can connect to the host.

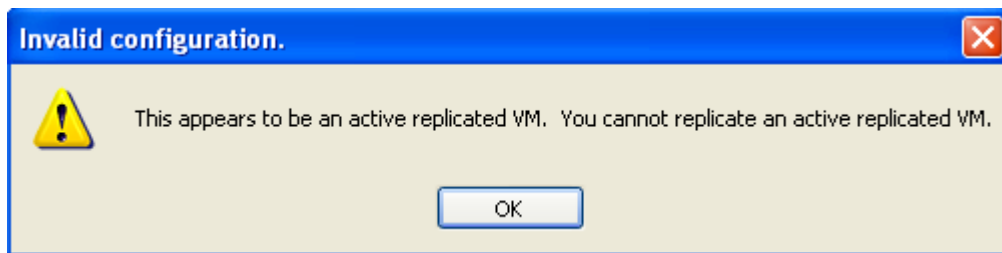
One or more VirtualCenter(s) is/are unreachable. Please check your VirtualCenter(s) and Proxy settings.
[Clear](#)

- If you attempt to configure a VC or host that is already been added, one of these messages will display:

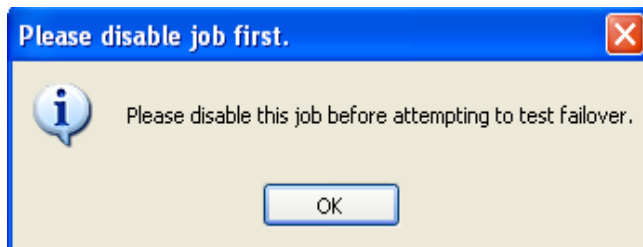


Replication

- If you click the Assign a New Job link and this message displays, it indicates that you are attempting to replicate to a destination VM that already has an active job assigned to it.



- On the Replication Management window, if you click either the Test Failover or Failover icon before disabling the replication job, a corresponding message displays. Disabling the job is required prior to initiating a Test Failover or a Failover.

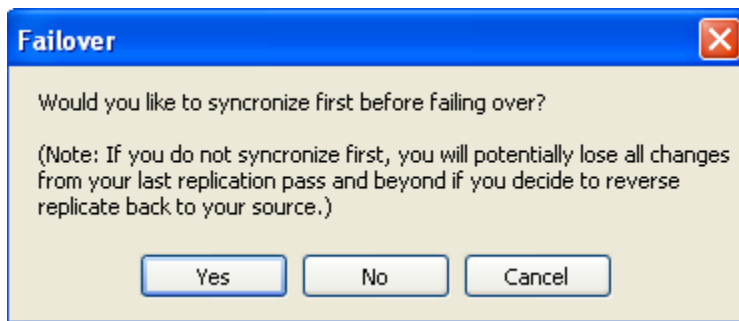




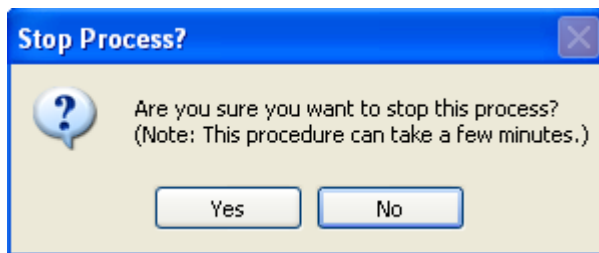
- On the Replication Management window, if you click the Remove icon before disabling the replication job, a corresponding message displays:



- On the Replication Management window, when you click the Failover icon, a corresponding message displays:



- When a replication job is in process, if you click the Stop Replicating icon on the Replication Management pane, this message displays:



- If a replication job fails after email notification has been configured, a failure notice will be sent to the email recipient listed for that job. The subject of the email will be “Replication pass failed.” The text of the email will be similar to this:

Job repl_job_nm (ID: ff209fb4f9484dee80524f04c4ec03b7) encountered a problem during replication from 10.0.99.207 to 10.0.99.208. The exact error message was:

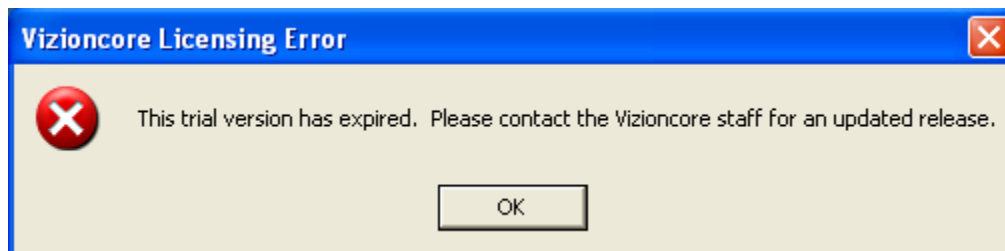
The request failed with HTTP status 503: Service Unavailable.

Note that a detailed log of the replication is attached to this email. If you cannot resolve this problem on your own, Vizioncore support team will require the attached log to determine the cause of the problem and advise you on the resolution.

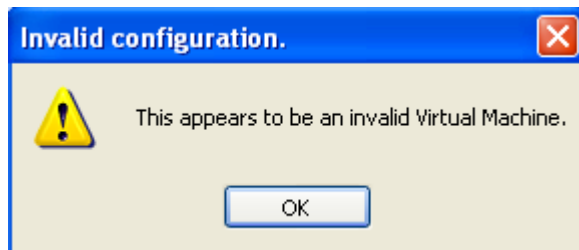
Regards,
Vizioncore Team

General

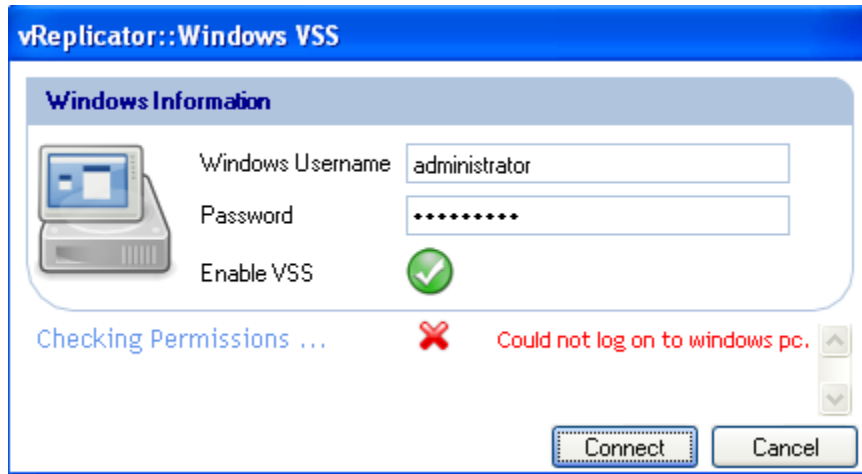
- If your trial license expires, this message will display:



- This error message can display if vReplicator is not able to connect to the host or VC to retrieve valid data on the selected VM.



- If you enter an incorrect user ID or password on the Windows VSS dialog, this message displays:



- If you click the swirl icon in the Status column of the VSS Summary window before you enter an IP address for the VM you configured, this message displays:

