



Medsphere[®]
Transforming Healthcare Through Open Source

OpenVista CareVue Installation Guide

Medsphere Systems Corporation
1903 Wright Place, Suite 120
Carlsbad, California 92008
www.medsphere.org

Copyright © 2013 Medsphere Systems Incorporated. All rights reserved.

The contents herein are proprietary and confidential to Medsphere Systems Corporation.

Reproduction of this material is strictly prohibited.

All other trademarks mentioned herein are the properties of their respective owners.

APPLICATION VERSION NUMBER	MANUAL REVISION DATE	CHANGES MADE	AUTHOR
Version 1	August, 2009	Original Medsphere publication date.	K. Steele
Version 2	August, 2009	Edited and added additional screen shots.	L. Bittle
Version 3	November, 2010	Edited and added additional steps. Also added CIA Broker section.	L. Tiller/K. Steele J. Tai/B. Mehling
Version 4	January, 2011	Added KIDS build section. Added standard port numbers to CIA broker section.	J. Tai/K. Steele
Version 5	May, 2011	Updated content	R. Killian/B. Mehling
Version 6	May 2011	Updated System Requirements	L.Tiller
Version 7	March 2013	Added installing WAR file to GlassFish instructions.	R. Dyrness/H. Gilbert

Table of Contents

System Requirements	1
<i>Service Pack</i>	<i>1</i>
<i>.NET Framework.....</i>	<i>2</i>
<i>Display Resolution</i>	<i>2</i>
KIDS Build Installation.....	3
<i>Determining the Correct Patch Sequence.....</i>	<i>3</i>
<i>Prerequisites.....</i>	<i>3</i>
<i>CareVue Infrastructure and Patch 6 Installation</i>	<i>3</i>
CIA Broker Setup	4
<i>Optimizing Performance</i>	<i>4</i>
Host Polling Interval.....	4
Maximum Number of Resource Devices and Number of Resource Slots to Allocate	5
Authentication.....	5
<i>Technical Details</i>	<i>6</i>
Server Application Object Repository Installation	7
Installing the Client Components to the Shared Folder	7
Run the vcmanager.exe File.....	10
Updating the WAR File on an Existing Application in GlassFish	13
Workstation Installation	16
<i>CareVue Client Installation</i>	<i>16</i>
Manual Installation	16
Automated Installation	21
<i>VueCentric Updater Service Installation & Configuration</i>	<i>22</i>
Manual Installation	22
Automated Installation	25
Customer Care Contact Information	27

Table of Figures

Figure 1. Determining Service Pack Level	1
Figure 2. Determining Display Resolution	2
Figure 3. Zip File Extraction	7
Figure 4. WinZip Self-Extractor Dialog Box	8
Figure 5. WinZip Confirmation Message.....	8
Figure 6. Broker Settings	8
Figure 7. vcBroker Installation Notes	9
Figure 8. vcManager Site Parameters Tab.....	10
Figure 9. Updater Tab	11
Figure 10. Server List Tab	11
Figure 11. Import Function from the Template Registry Tab	12
Figure 12. Default Templates Dialog Box	12
Figure 13. Web and WAR File Structure.....	13
Figure 14. Applications Link	14
Figure 15. Redeploy WAR File	14
Figure 16. Locate WAR File in Repository.....	14
Figure 17. .msi File in utl Folder of Repository.....	16
Figure 18. Security Warning Dialog Box	16
Figure 19. Installer Setup Wizard	17
Figure 20. Path to Application Repository	18
Figure 21. Select Installation Folder Dialog Box.....	18
Figure 22. Confirm Installation Dialog Box.....	19
Figure 23. Installation Complete	19
Figure 24. CareVue Shortcut Icon.....	20
Figure 25. Shortcut Tab	20
Figure 26. CareVue Logon Window	21
Figure 27. VueCentric Updater Welcome Screen	22
Figure 28. VC Updater Username/Password Dialog Box	23
Figure 29. Select Installation Folder.....	24
Figure 30. Confirm Installation.....	24
Figure 31. Service Installed Successfully	25

System Requirements

To enable CareVue to install and run correctly, the site administrator must ensure that computers at each workstation meet the following requirements:

- Windows XP Service Pack 2 or higher
- Microsoft .NET framework version 3.5 or higher
- A screen resolution of no less than 1280x800

Failure to have one or more of these in place causes load and/or launch errors, and may result in a distorted display.

Service Pack

To determine what Service Pack your computer is currently running, do the following:

1. Click Start, then My Computer.

Note: On some computers, the icon for My Computer is right on the desktop.

2. Right-click to display the System Properties.

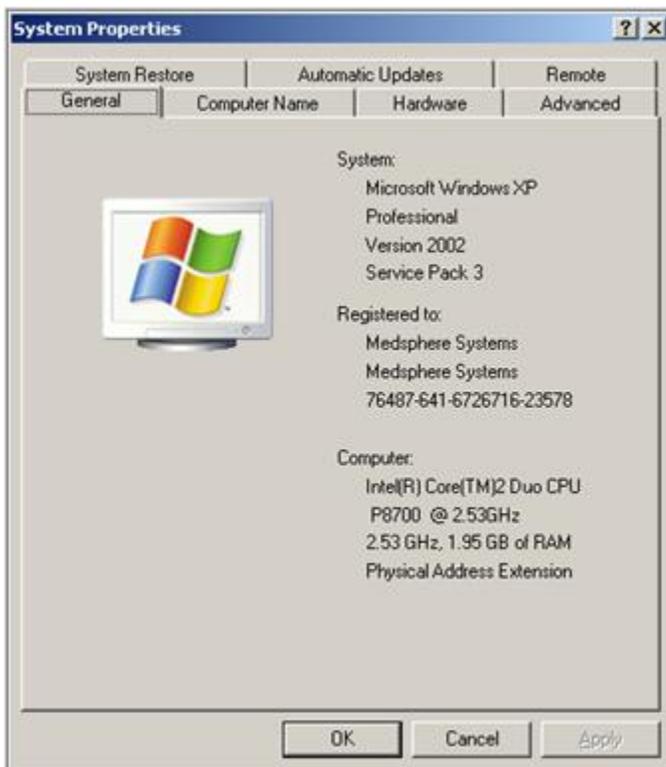


Figure 1. Determining Service Pack Level

Note: Computers running the Windows 7 OS should not require any particular version or Service Pack.

.NET Framework

To determine what version of .NET Framework is installed, paste the following in your Windows Explorer:

c:\windows\microsoft.NET\Framework\<version>

Display Resolution

To set the Display Resolution, do the following:

1. Go to Start > Control Panel > Display.
2. Go to the Settings tab.

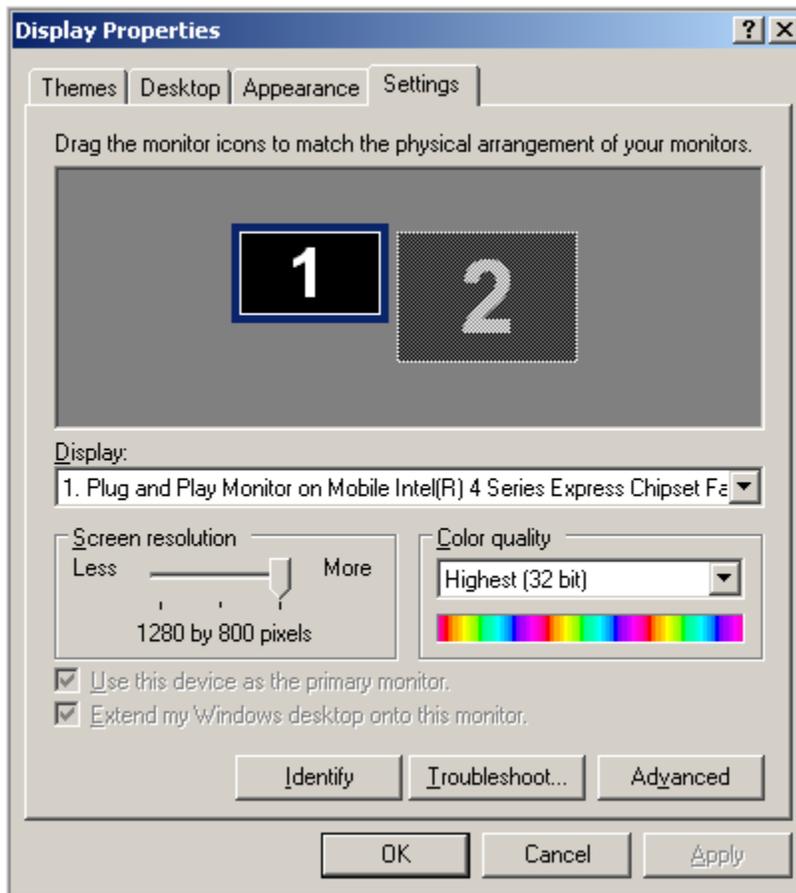


Figure 2. Determining Display Resolution

Note: Most computers' default settings suffice. Only those workstations with older monitors or monitors over 19 inches may need adjustment.

KIDS Build Installation

Determining the Correct Patch Sequence

The patches (KIDS builds) that must be installed will vary from site to site, depending on the service-pack level of the site, and whether or not the site was a CareVue beta site. Check with Medsphere Release Management to ensure that the correct KIDS builds are to be installed.

Prerequisites

The following prerequisites apply to all sites, including beta sites. These prerequisites should already be met by the patch sequence prescribed by Release Management and existing configuration, but verify that they are in place before installing CareVue.

- Sites must be at the 2.0 Service Pack version or later
- Microsoft .NET Framework 4 before installing CareVue
- GT.M sites must be running GT.M 5.4-000A or later
- Cache sites must map %ZI* and %ZU* routines back to the local namespace

CareVue Infrastructure and Patch 6 Installation

Unlike most releases, which are bulk-loaded by a configurator, the CareVue Infrastructure and Patch 6 bundles have their own installer. The configurator spreadsheet included with the CareVue release marks the Infrastructure and Patch 6 patches as Manual Install. Use the MSCCV CAREVUE UPDATE and MSCCV CV EHR PATCH 6 UPDATE Terminal Services menu options to install these patches. **DO NOT** install the patches one-by-one manually or attempt to force the configurator to load them.

The remainder of the CareVue patches can be loaded by the configurator as normal.

CIA Broker Setup

Post-installation configuration consists of the following steps:

1. Create an entry in the CIA LISTENER file for each listener you want to be automatically started at system startup. TCP port selection should not conflict with other port assignments. Use the following standard port numbers to ensure consistency across installations:

Namespace	Port
Production	9360
TRAIN	9361
DEV	9362

2. Run the CIANB STARTALL option to start the listeners.
3. Configure the CIA Broker to automatically start upon system boot-up:
 - a. On Cache systems, schedule the CIANB STARTALL option to run under TaskMan with the STARTUP option enabled.
 - b. On GT.M systems, ensure that the ZSTART system startup routine includes a call to STARTALL^CIANBLIS.

Note: You may use the CIANB MAIN MENU option to modify server parameters and start and stop listener daemons.

Optimizing Performance

Several parameter settings can directly affect the performance of the broker. Typically, there is a trade-off between host system load and client performance. These settings permit establishing a balance between these trade-offs. Settings may be modified using the CIANB PARAMETERS menu option. Changing one of these settings affects all running sessions as well as future sessions. In this manner, one can modify a setting and see an almost immediate impact on performance measures.

Host Polling Interval

The Host Polling Interval determines the interval in seconds that the client will interrogate the host system for signaled events and completed asynchronous remote procedure calls. To minimize the impact on foreground activities, the broker performs this interrogation on a background thread and only when the broker is otherwise idle. A lower setting improves client-response time, but at the expense of increased network traffic and a heavier load on the host system. The actual server overhead from a polling operation is minimal if there are no events to report. A setting of 3-5 seconds appears to be optimal for most environments.

Maximum Number of Resource Devices and Number of Resource Slots to Allocate

There are two parameters that control the concurrency of background tasks used to service asynchronous remote procedure calls. These parameters (Maximum Number of Resource Devices and Number of Resource Slots to Allocate) control the availability of resource devices. Resource devices are used by TaskMan to control concurrency. A task assigned to a resource device will await execution until one of the slots allocated to that resource device becomes available. A task occupies one of these slots during the course of its execution and releases the slot upon completion. The broker assigns a resource device from a pool of devices when a session is initially created. This assignment is based on a load balancing algorithm. The size of this pool is determined by the Maximum Number of Resource Devices setting and the number of execution slots available for each resource is determined by the Number of Resource Slots to Allocate setting. Understanding the interaction between these two settings is important to understanding the trade-offs between server load and client performance.

Since a session is assigned a single resource device during its lifetime, that session only competes with other sessions that share the same resource device. The more resource devices allocated, the less the likelihood that multiple sessions will compete for the same execution slots. In this manner, the impact of a session that makes heavy use of asynchronous remote procedure calls on other sessions can be minimized. Thus, a large setting for number of resource devices lessens competition across sessions, but potentially increases the number of background tasks that run concurrently. For a given resource device, the number of allocated slots determines how many asynchronous remote procedure calls may run concurrently across all sessions assigned to that device. A large number of slots improves the responsiveness of asynchronous calls, but at the expense of heavier server load.

The maximum total number of concurrent background tasks serving the pool of resource devices may be calculated by multiplying these two settings. Thus, if both parameters are set to a value of 5, the maximum number of concurrent background tasks would be 25. Of course TaskMan limits the overall number of concurrent tasks, so this maximum may not be achievable depending on other tasks running at the time, and the maximum limit of concurrent tasks set by TaskMan. For this reason, setting these parameters too high can adversely affect the performance of other background tasks by unfairly competing for TaskMan execution slots.

There are currently no set recommendations for these parameter values. Larger systems with large numbers of users obviously require higher settings. Some experimentation is required to determine the optimal values.

Authentication

The authentication method used is controlled by the Authentication Method parameter. This parameter may be set during broker installation or by invoking the CIANB PARAMETERS menu option. It is set on a per UCI basis. Each UCI that is to be accessible by a broker session must have an authentication method defined for it or access will be denied. The parameter has three possible settings: normal, client-cached, or server-cached.

CareVue users should set this parameter to normal. When the authentication method is set to normal, the user is prompted for the OpenVista access and verify codes on every authentication attempt.

Technical Details

For further details on the CIA Broker, refer to the following documents:

- *CIA Broker Installation Guide*
- *CIA Broker Technical Manual*

Server Application Object Repository Installation

The .zip file provided for installation of the client application components must be extracted and installed into a shared folder on a Windows or Samba file server. All users of the OpenVista CareVue application should have read-only access to this folder.

The shared folder should be subdivided into separate directories for each namespace. This allows different versions of CareVue to be installed in parallel. For example, a site may want to test a new CareVue release in DEV while production continues running the current release. In this example, the path to the shared folder would be [\\openvista1\carevue](#), the path to the production object repository would be [\\openvista1\carevue\prod](#), and the path to the dev object repository would be [\\openvista1\carevue\dev](#).

Installing the Client Components to the Shared Folder

1. Extract the .zip file. You must have read and write access to the shared folder to complete this installation. You will see the following window:

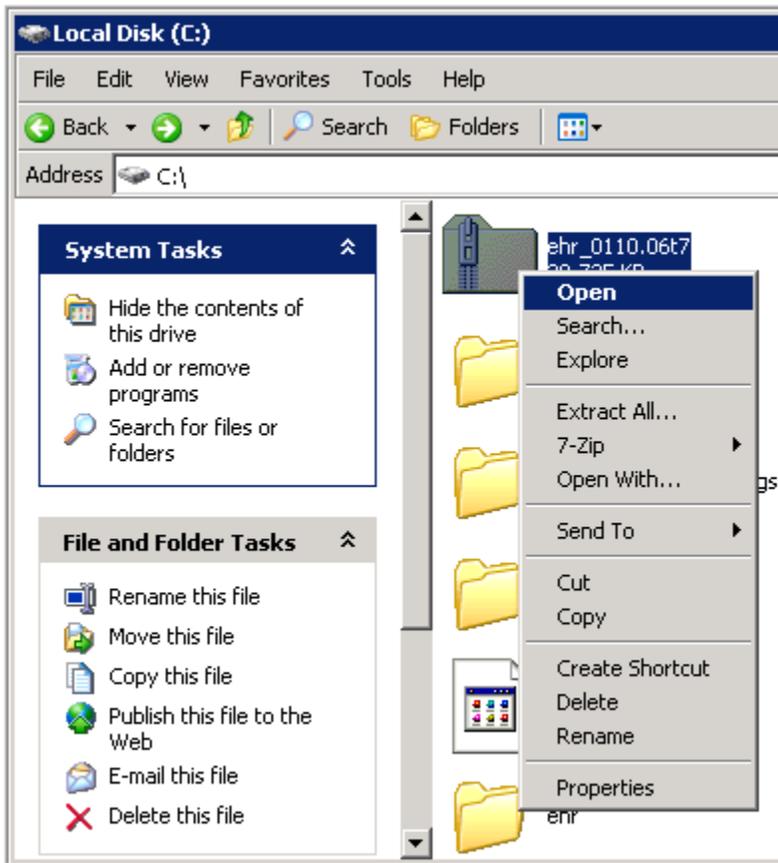


Figure 3. Zip File Extraction

2. The WinZip Self-Extractor dialog box appears. Enter the full path to the shared folder where the client files are to reside.

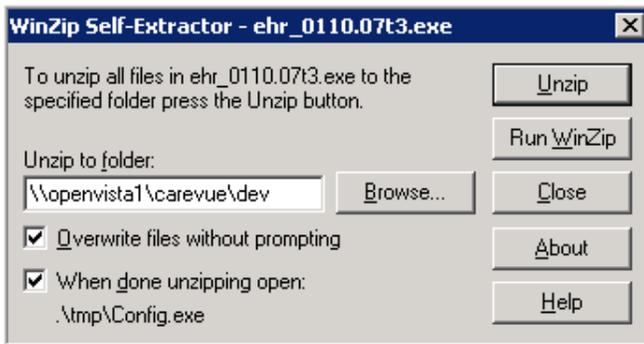


Figure 4. WinZip Self-Extractor Dialog Box

3. Click Unzip to extract the files necessary to begin the installation process. When the extraction process completes, a confirmation message appears:



Figure 5. WinZip Confirmation Message

4. Click OK.
5. You must edit your broker settings by opening the vcBroker.ini file in the bin folder. This loads the vcBroker.ini file into Microsoft® Notepad for editing.
6. Make any necessary changes and save the file before exiting Notepad.
7. Follow the installation notes and update the server, port, and uci appropriately.

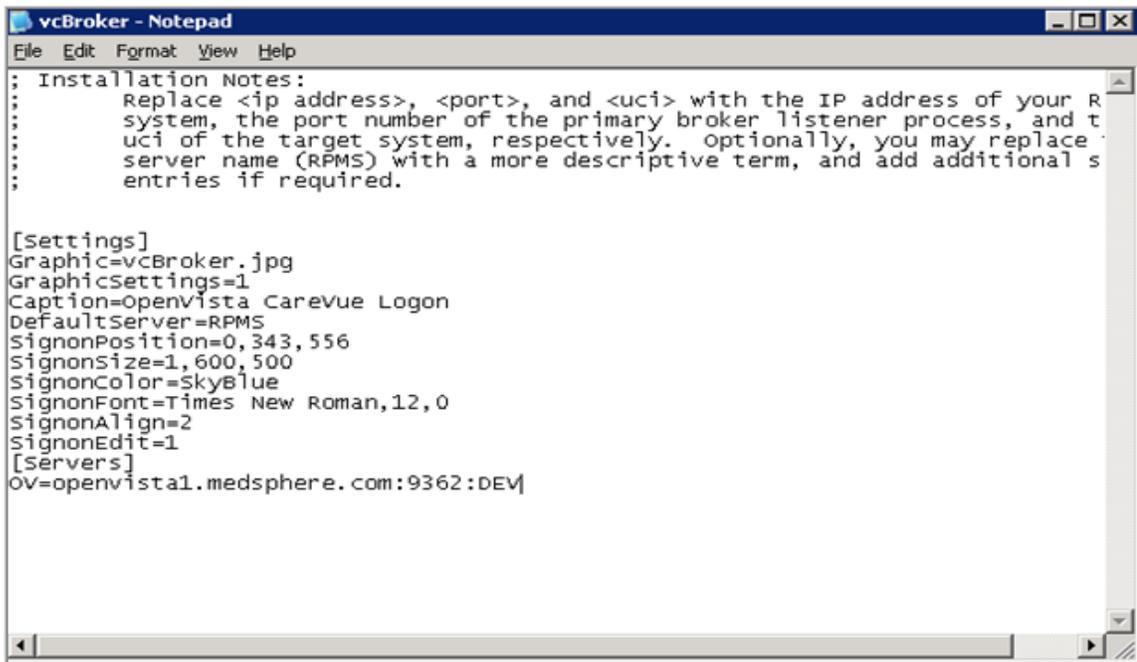
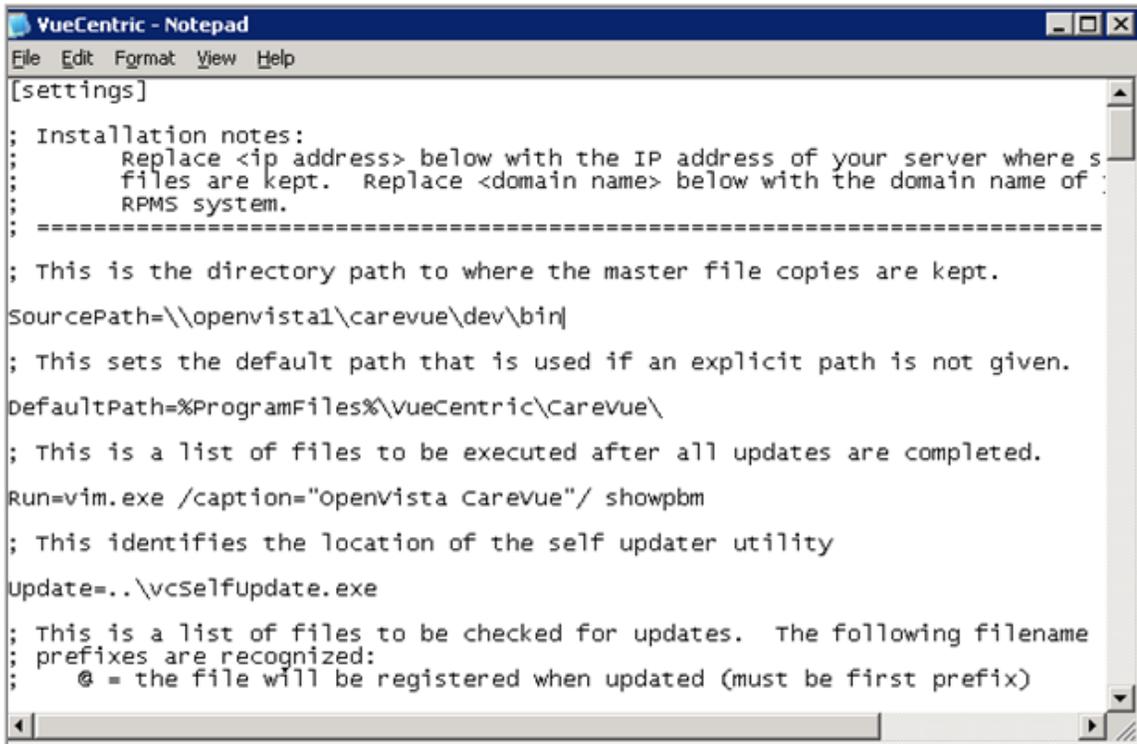


Figure 6. Broker Settings

8. Save and close the vcBroker.ini file, and copy it to the utl folder.
9. Open the VueCentric.ini file contained within the bin folder.
10. Follow the installation notes.

Note: You must define the Source Path and the Default Path as well.



```
[settings]

; Installation notes:
;   Replace <ip address> below with the IP address of your server where s
;   files are kept.  Replace <domain name> below with the domain name of
;   RPMS system.
;   =====
; This is the directory path to where the master file copies are kept.
SourcePath=\\openvista1\carevue\dev\bin\
; This sets the default path that is used if an explicit path is not given.
DefaultPath=%ProgramFiles%\VueCentric\CareVue\
; This is a list of files to be executed after all updates are completed.
Run=vim.exe /caption="openvista Carevue"/ showpbm
; This identifies the location of the self updater utility
Update=..\vcselfupdate.exe

; This is a list of files to be checked for updates.  The following filename
; prefixes are recognized:
;   @ = the file will be registered when updated (must be first prefix)
```

Figure 7. vcBroker Installation Notes

Notes:

- For the source folder, this should be the full UNC path to the location of the bin folder within your shared folder on the windows server. This path should be resolvable by all users on all client workstations that are to run the OpenVista CareVue application. The administrator should also make this readable by all workstations that use CareVue. Administrators should have read and write access.
- For target folder, this is the path to the application folder on the client workstation where the OpenVista CareVue application deploys the client components. The recommended path is as shown, substituting the domain name of the target OpenVista system in place of the domain name above. The run setting can be left as is, or a custom caption can be added if desired.

11. Save and close the VueCentric.ini file.

Run the vcmanger.exe File

1. Run vcmanger.exe, and set it to point to the server.

Note: If this is an updating installation, any customized msi files you may have in your utl folder (for example, EHR_Shortcut.msi and vcUpdaterService2.msi) will be preserved. There are no changes to the msi files delivered with this installation from previous installations. Therefore, if you have already deployed the msi files to your client workstations, you do not need to redeploy them after this installation.

2. The vcManager Site Parameters tab must have the object source path changed so that it points to \\server\carevue\dev\lib.

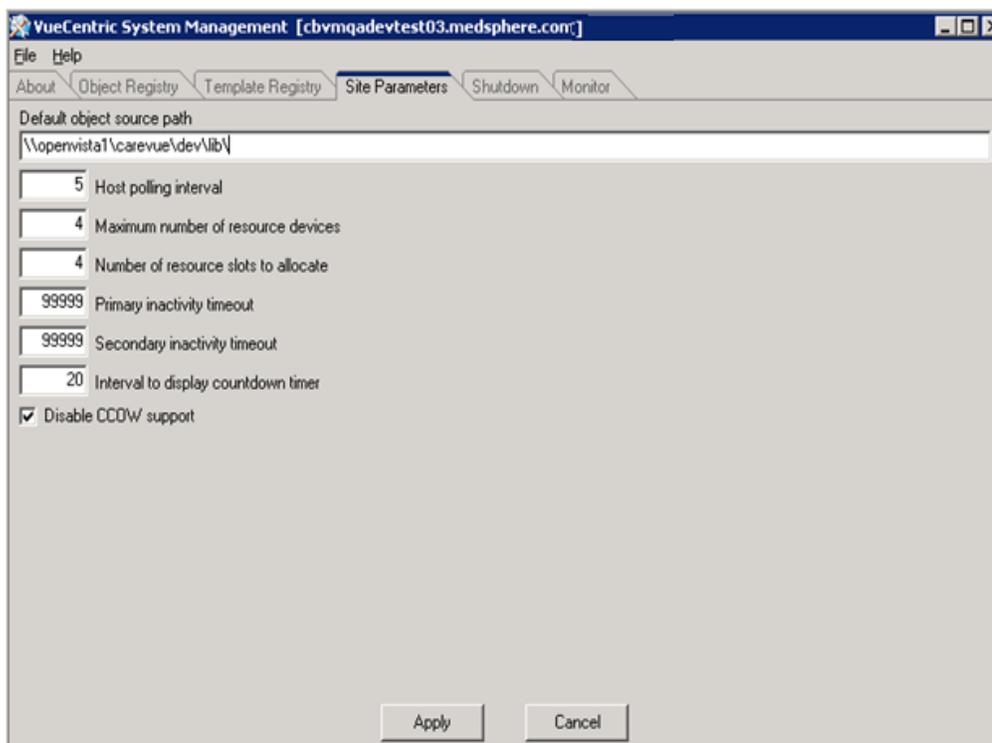


Figure 8. vcManager Site Parameters Tab

3. On the first installation in the file server, or when the bin folder changes in the client repository, then the vciniconfig.exe should be run from the client repository. Double-click vciniconfig.exe, which is found in the bin folder.
4. Choose the Updater tab, and then check to ensure that the settings match to those that were entered in the vcbroker.ini file above.

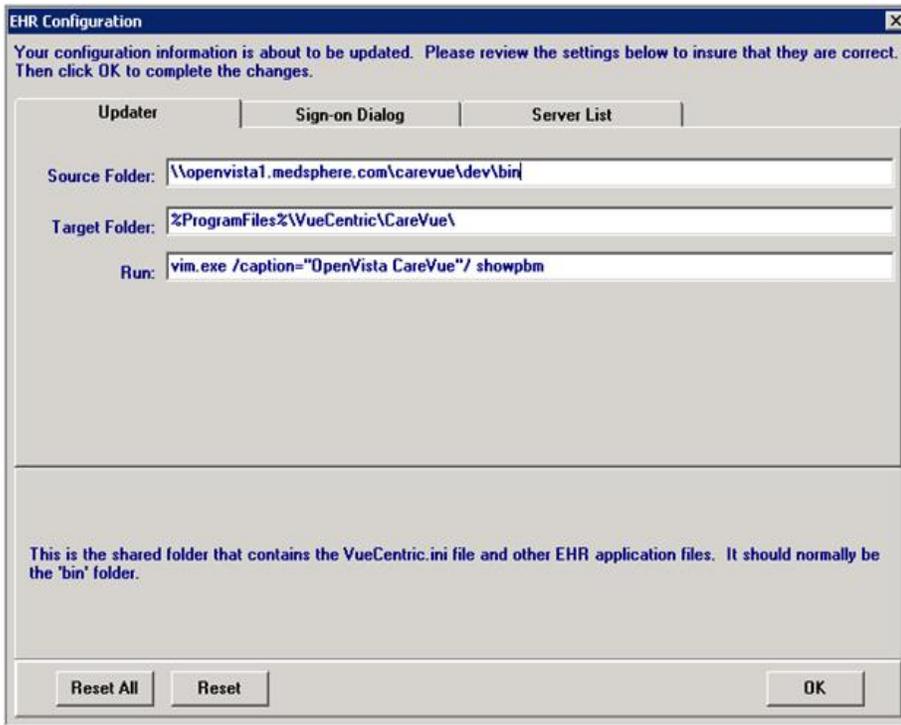


Figure 9. Updater Tab

5. Choose the Server List tab, and then check that the settings match the vcbroker.ini file that was entered in the previous steps.

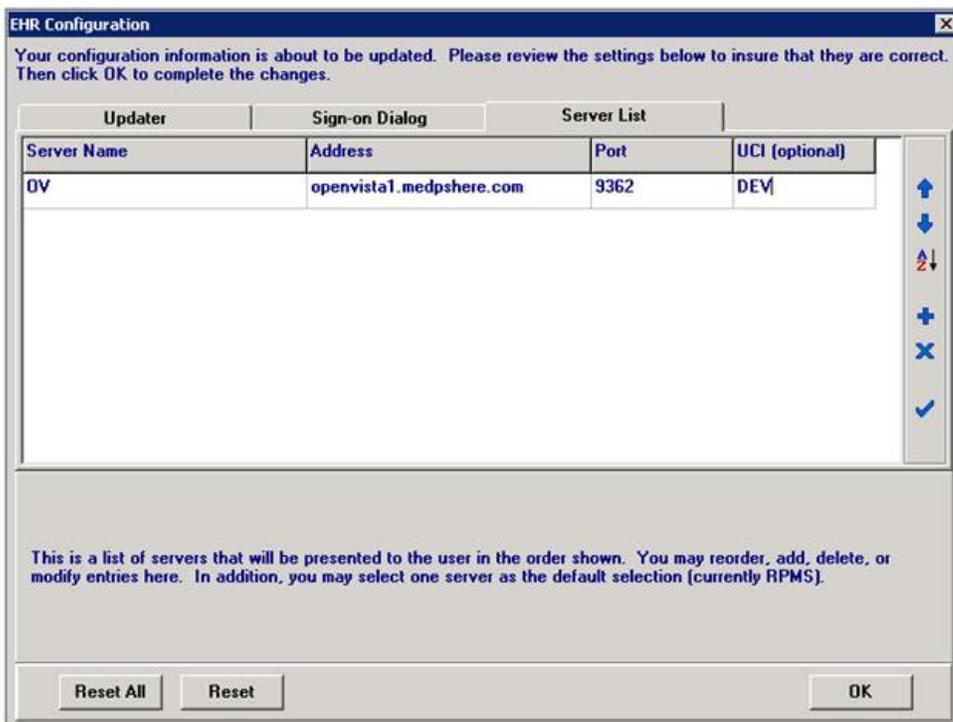


Figure 10. Server List Tab

- The new user view templates (.vtr) contained in the shared folder must be imported into the vcManager using the Template Registry tab .

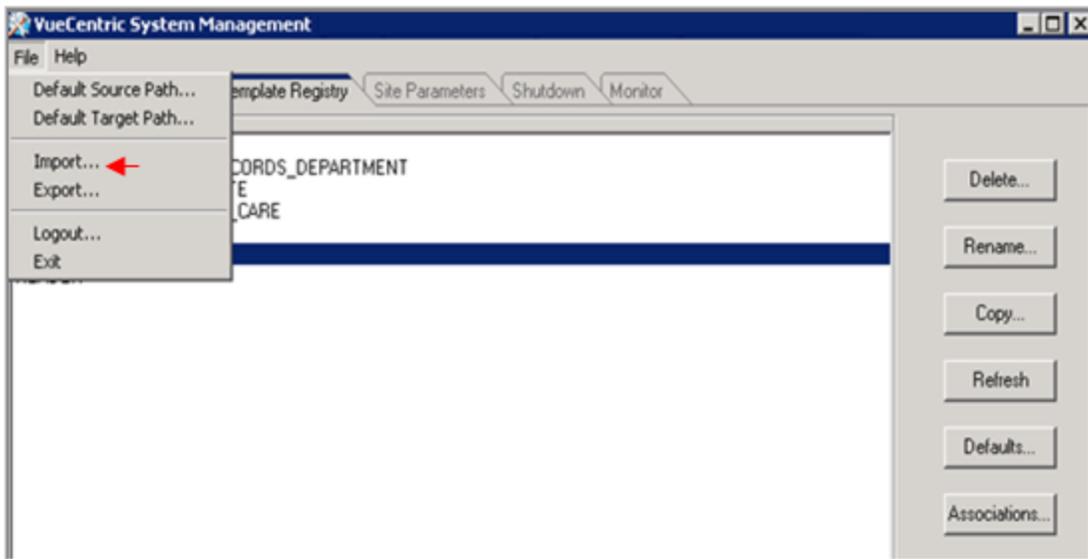


Figure 11. Import Function from the Template Registry Tab

- Default user view templates must be assigned to view and access CareVue. Go to the Template Registry tab, and click Associations to set the default template on the chosen level.

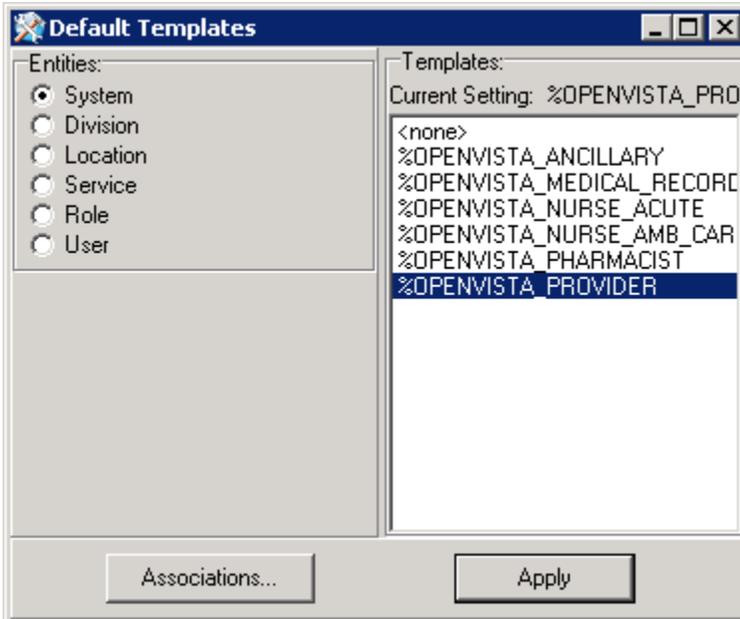


Figure 12. Default Templates Dialog Box

Updating the WAR File on an Existing Application in GlassFish

To update a WAR file on an existing GlassFish application, complete these steps:

1. Move the executable file to the server, then double-click the .exe file and save the files to your repository. Any new WAR files can then be found in the Web folder.
2. Go to the Client Repository > web folder > wars folder to view the WAR file(s).

Note: If necessary, move the applicable WAR file to a folder that is easily accessible from GlassFish.

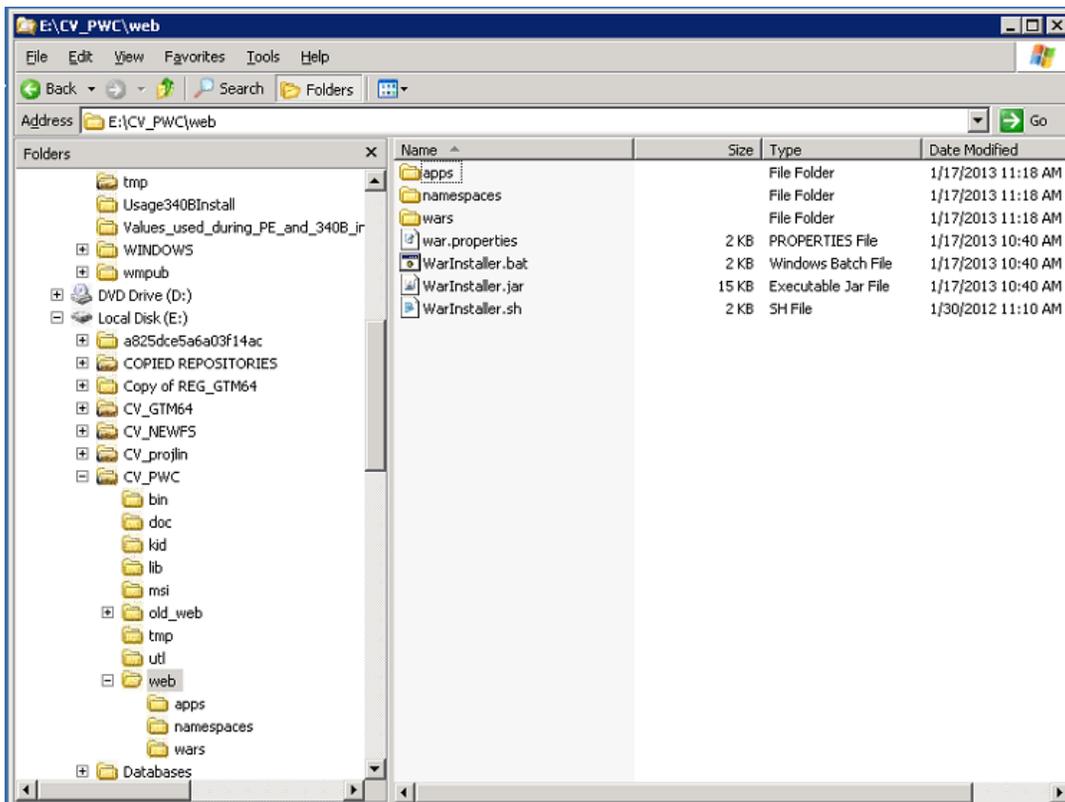


Figure 13. Web and WAR File Structure

3. Go to the GlassFish administration console.
4. From the Common Tasks section, click Applications.



Figure 14. Applications Link

- In the Applications window, locate the WAR file you want to add, and then click Redeploy.

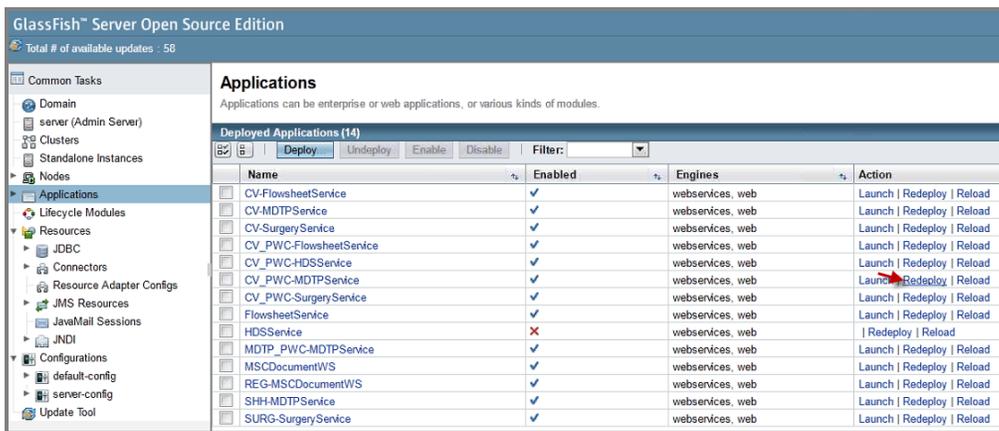


Figure 15. Redeploy WAR File

The Redeploy Applications or Modules window opens.

- Click Browse to locate the WAR file.

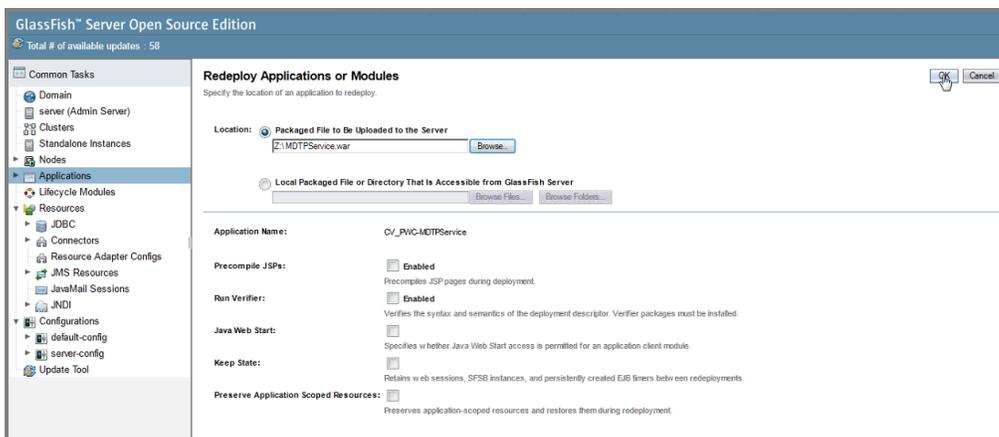


Figure 16. Locate WAR File in Repository

7. Click OK. The OK button changes to Processing....

The Applications window re-opens when the WAR file has been updated.

Note: To install a new WAR file to a new application in GlassFish, refer to the GlassFish Administration Console Installation Instructions.

Workstation Installation

CareVue Client Installation

Manual Installation

1. Locate the CareVue_Interactive_#.#.msi found in the shared utl folder in the client repository. This install file must be run the first time that the client is installed on the PC. Double-click this file. In the utl folder, double-click this icon to run the .msi:



Figure 17. .msi File in utl Folder of Repository

2. The Security Warning dialog box appears. Click Run.



Figure 18. Security Warning Dialog Box

3. The Installer Setup Wizard opens. Click Next to start the step-by-step instructions.

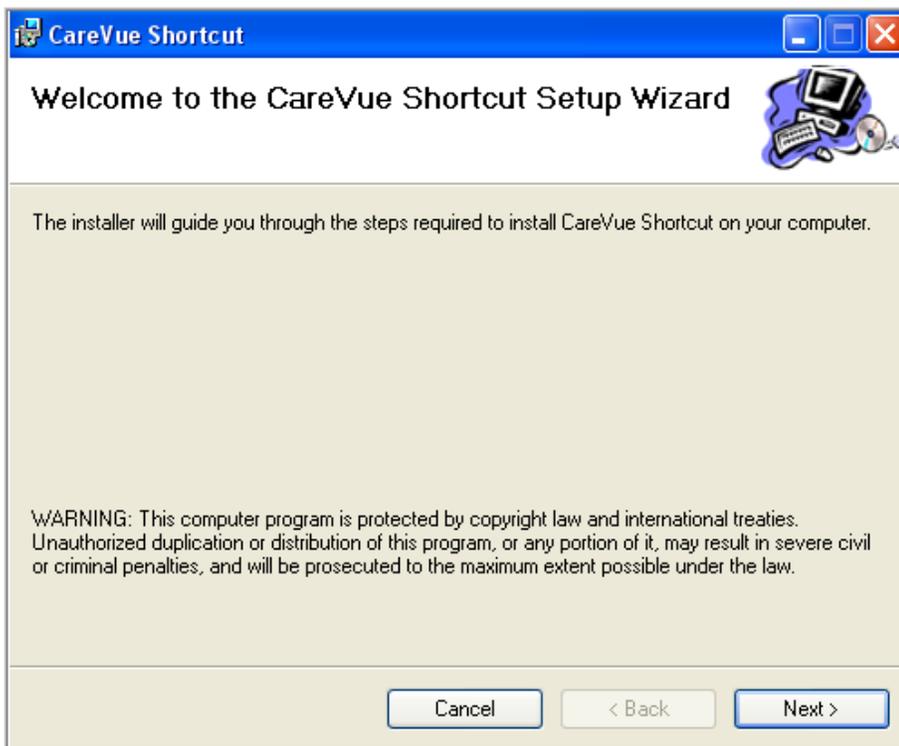


Figure 19. Installer Setup Wizard

4. Enter the path to the repository (\\servername\sharedfoldername\bin) in the EHR_Setup dialog box and click Next.

Important: The path to the client repository is the UNC path that was created earlier. It **MUST** always end in bin.

Note: The path typed into the following dialog box is the same as the path shown on the vcConfig.exe Updater tab in the Repository installation instructions, above.

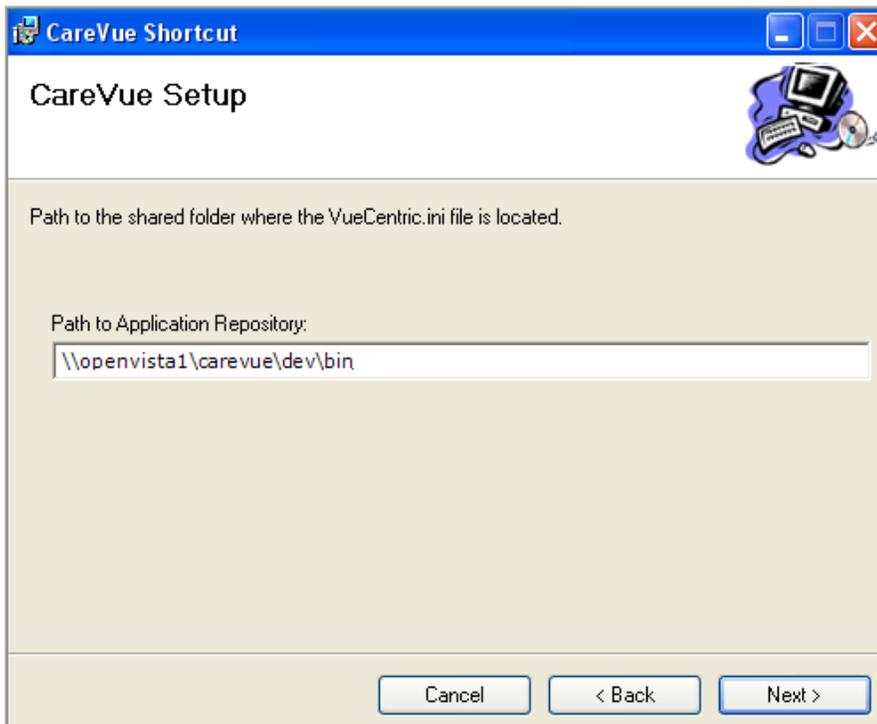


Figure 20. Path to Application Repository

5. After designating the path to the repository, click Next. The Select Installation Folder dialog box displays showing the directory into which the CareVue installation files go.

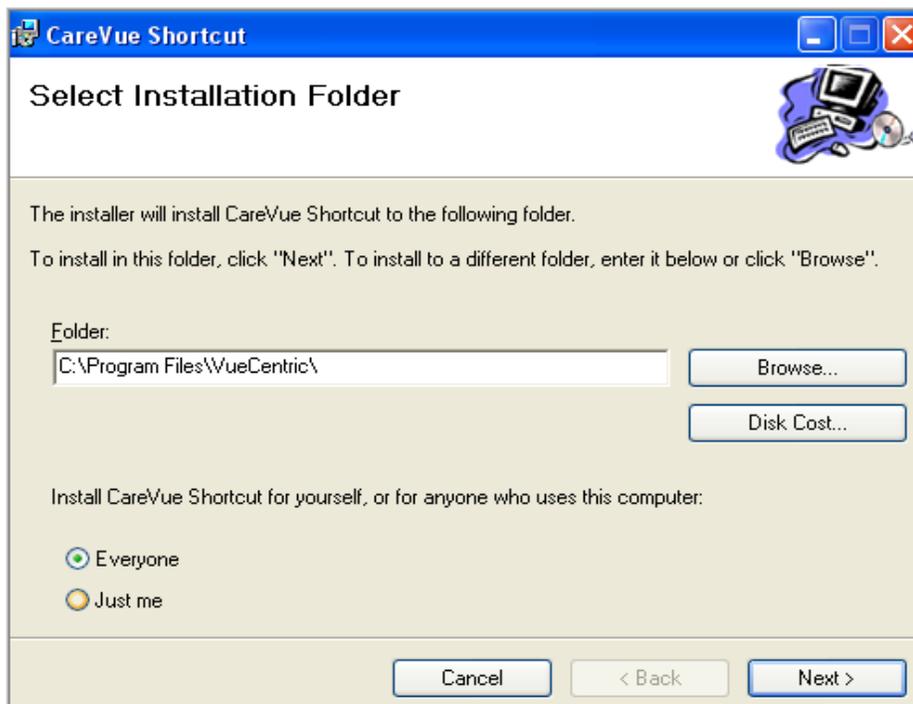


Figure 21. Select Installation Folder Dialog Box

6. Generally, there is no need to change the folder path. Simple accept the default that appears and click Next to begin the install.

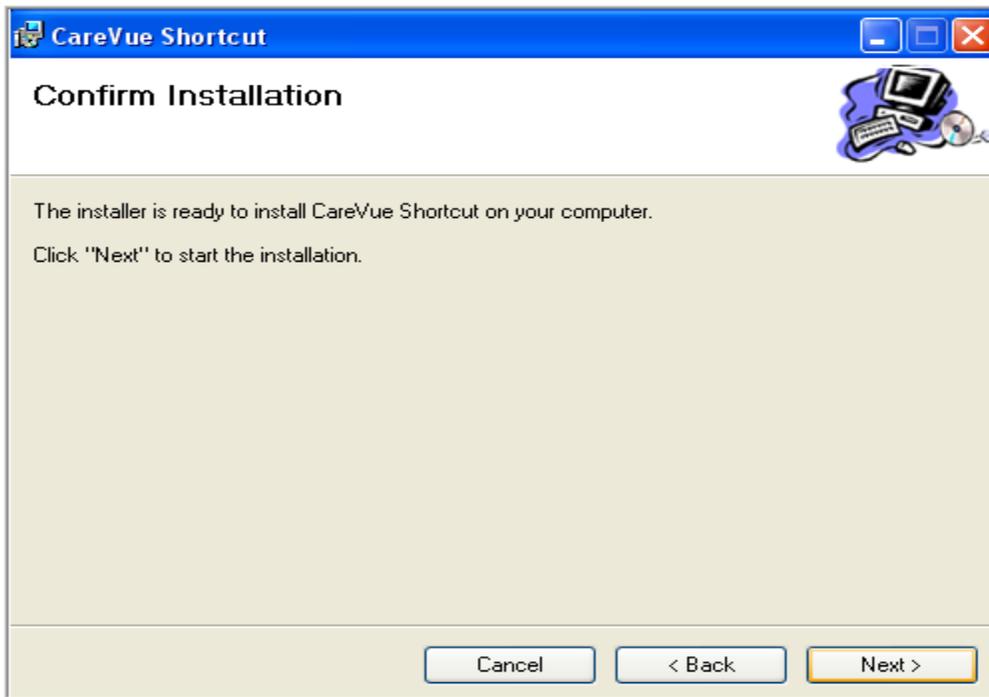


Figure 22. Confirm Installation Dialog Box

7. Click Close when the installation is complete.

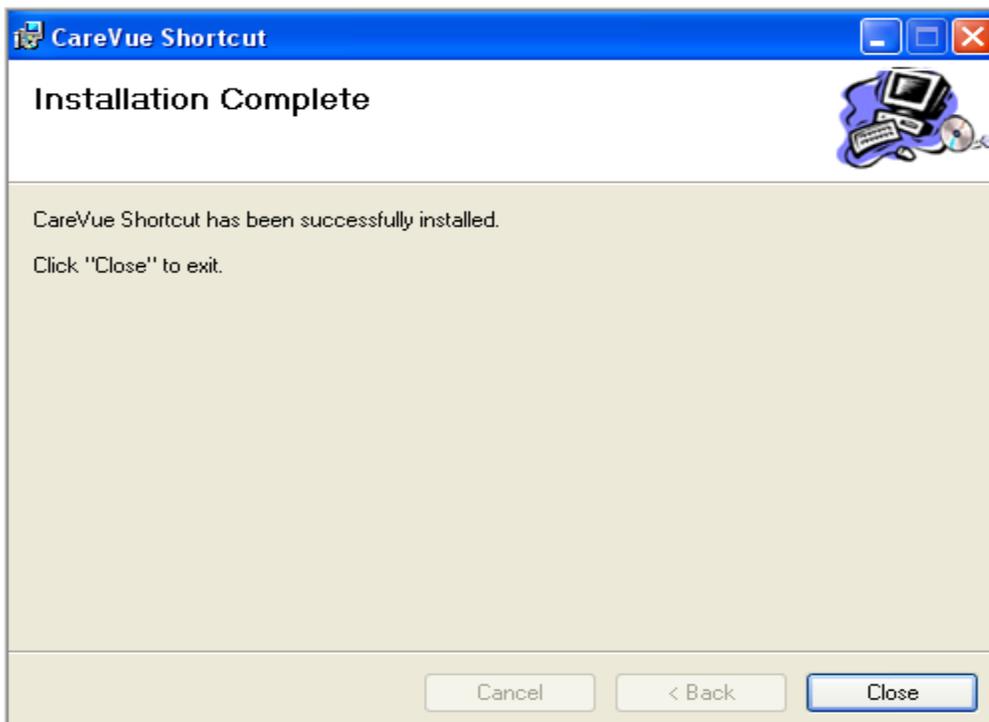


Figure 23. Installation Complete

The client is then moved to the local workstation and is installed under the folders that you defined in the previous steps. A shortcut to CareVue appears on your desktop.



Figure 24. CareVue Shortcut Icon

8. Right-click the icon and select Properties. On the Shortcut tab, the option Start In should display the same path as shown above.

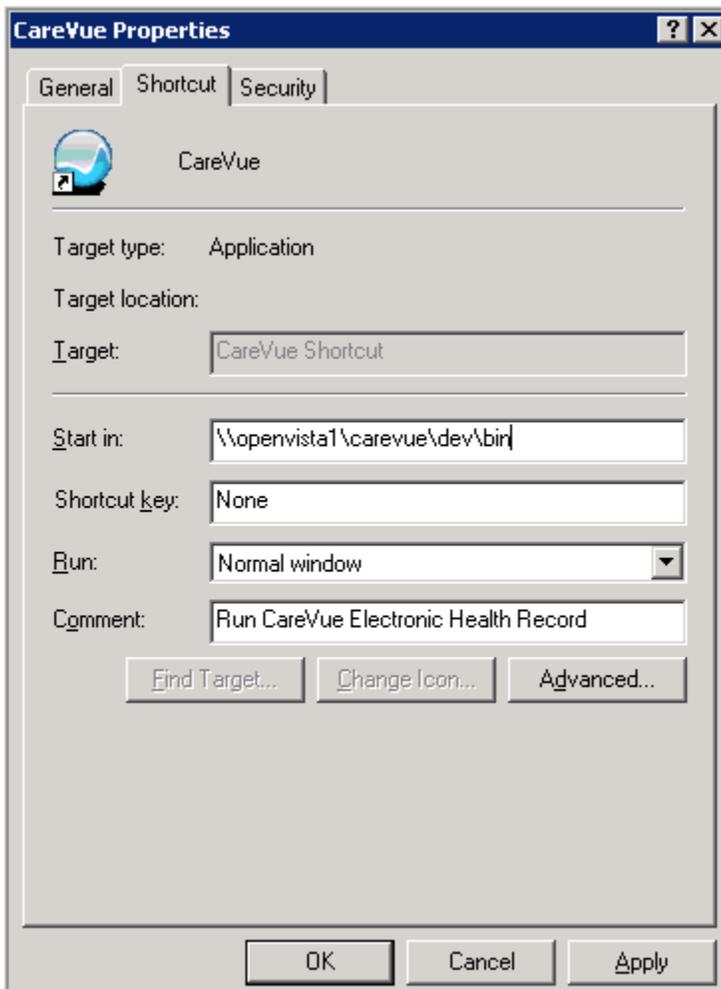


Figure 25. Shortcut Tab

- Double-click the desktop shortcut. The repository is updated, and the CareVue Logon window appears.

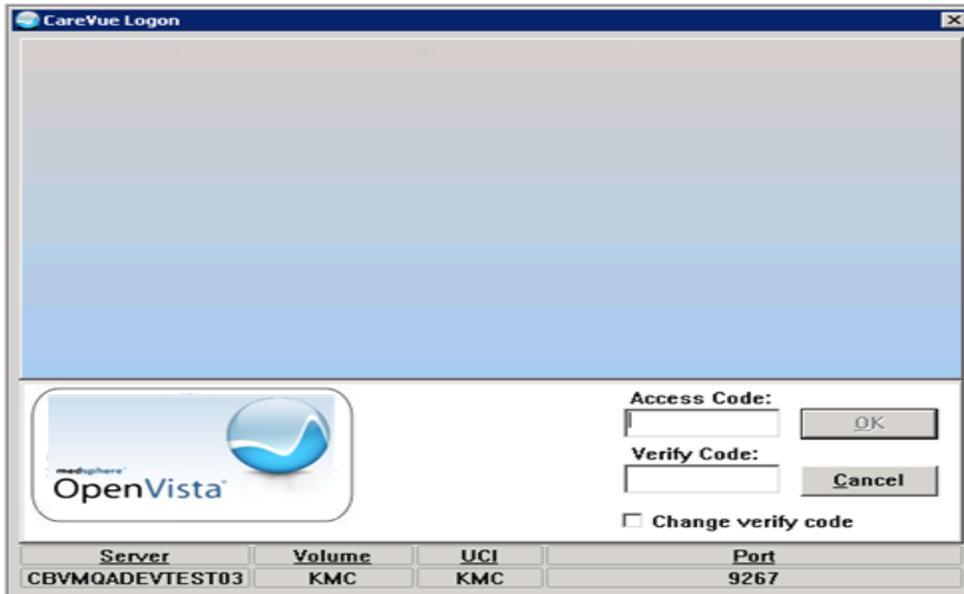


Figure 26. CareVue Logon Window

Automated Installation

Automated installation of the CareVue client may be performed by editing (preferably a copy of) CareVue_silent_#.#.msi to include the paths to the Application Repository and the local installation path.

- If an MSI editor is not available, obtain and install the Orca MSI editor (provided free of charge by Microsoft).
- Locate the CareVue_Silent_#.#.msi found in the shared msi folder in the client repository.
- Create a copy of this MSI to perform modifications on.
- Open the new copy of the MSI in Orca (or other MSI editor).
- Locate the Property table within the MSI.
- Add a row to the Property table named REPOSITORYPATH.
- Set the value to the full path to the application repository (for example, \\openvista1\carevue\dev\bin).
- Add a row to the Property table titled TARGETDIR.
- Set the value to the path where the CareVue client will be installed. If this row is left undefined, the target path defaults to C:\Program Files\VueCentric.
- Save the MSI.
- Deploy the modified MSI via group policy or a third-party software deployment solution.

VueCentric Updater Service Installation & Configuration

To allow for CareVue-client updates to automatically occur when the client is being run by a non-privileged user, the VueCentric Updater Service runs under a user account with special privileges, and handles client updates for non-privileged users.

There are several specific privileges that must be granted to the account designated to run the VC Updater Service:

- **Registry** – Full control of HKLM\Software\Classes
- **Group Policy** – Log on as a service (defined in Computer Configuration | Windows Settings | Security Settings | Local Policies | User Rights Assignments | Log on as a service)
- **Workstation Filesystem** – Full Control on the path that the CareVue client was installed into (typically C:\Program Files\VueCentric)

These privileges may be issued in a number of ways depending on the site's security policies. Medsphere's current recommendation is to create a dedicated domain account to run the VC Updater Service, make that account a member of the local administrator group on each workstation that runs the CareVue client, and to use AD Group Policy to configure the Logon as a Service right for those workstations.

Manual Installation

1. Locate the vcUpdaterService_Interactive.msi found in the shared msi folder in the client repository. Double-click this file.
2. At the Welcome screen, click Next.

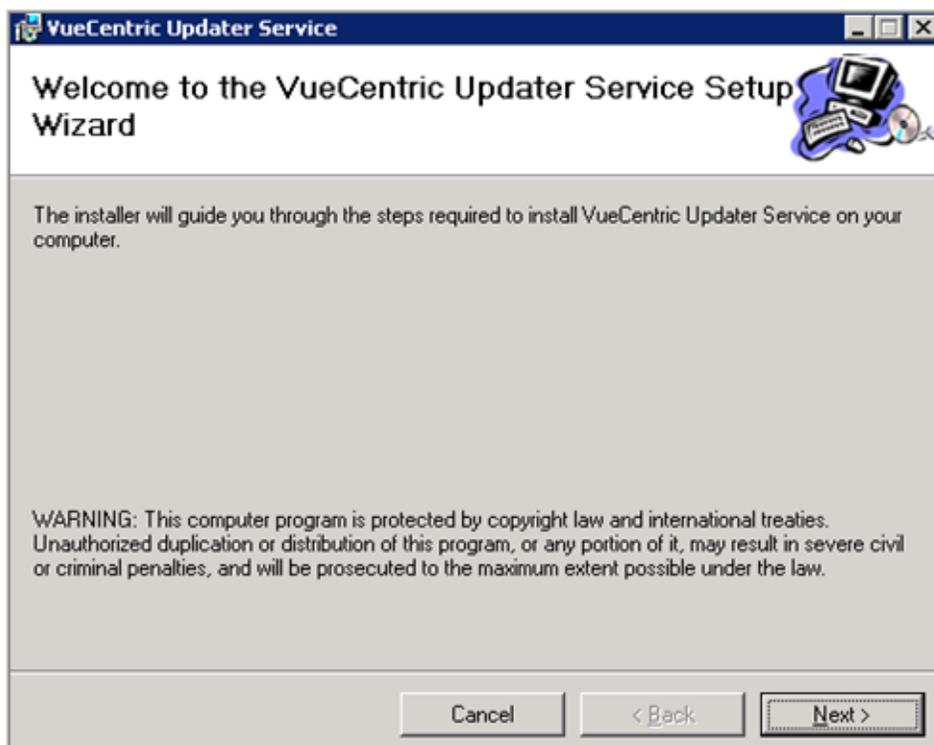


Figure 27. VueCentric Updater Welcome Screen

3. In the Username/Password dialog box, enter the username and password of the account that was created to run the VC Updater Service. Be sure to enter the domain details (in either domain\username or username@domain format) if the service will run as a domain account.
4. Click Next.

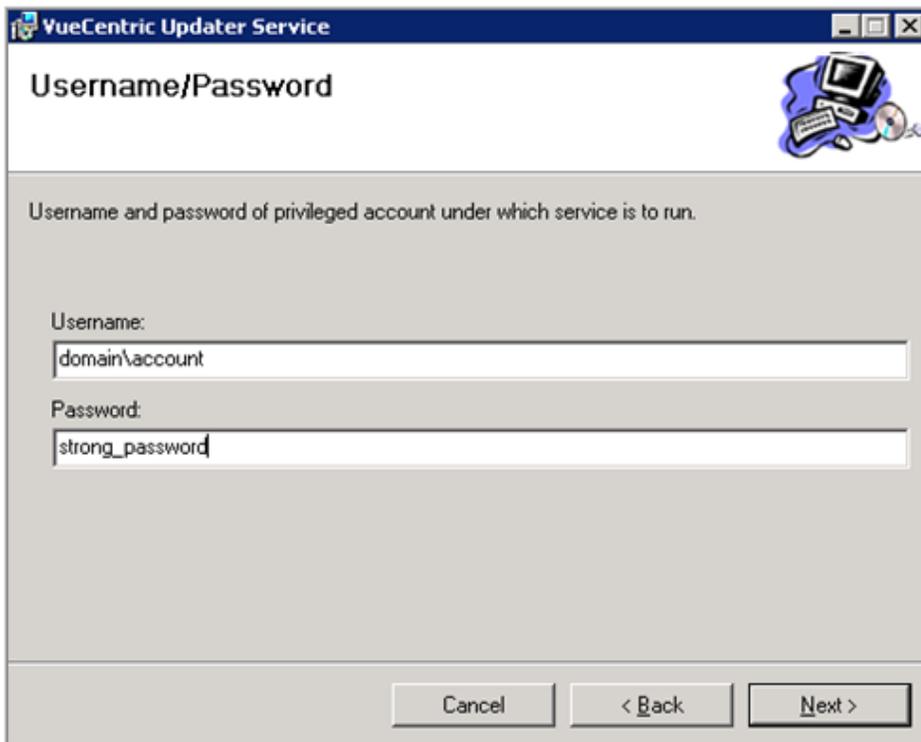


Figure 28. VC Updater Username/Password Dialog Box

5. In the Select Installation Folder dialog box, enter the path that the CareVue client was installed to (typically C:\Program Files\VueCentric).
6. Click Next.

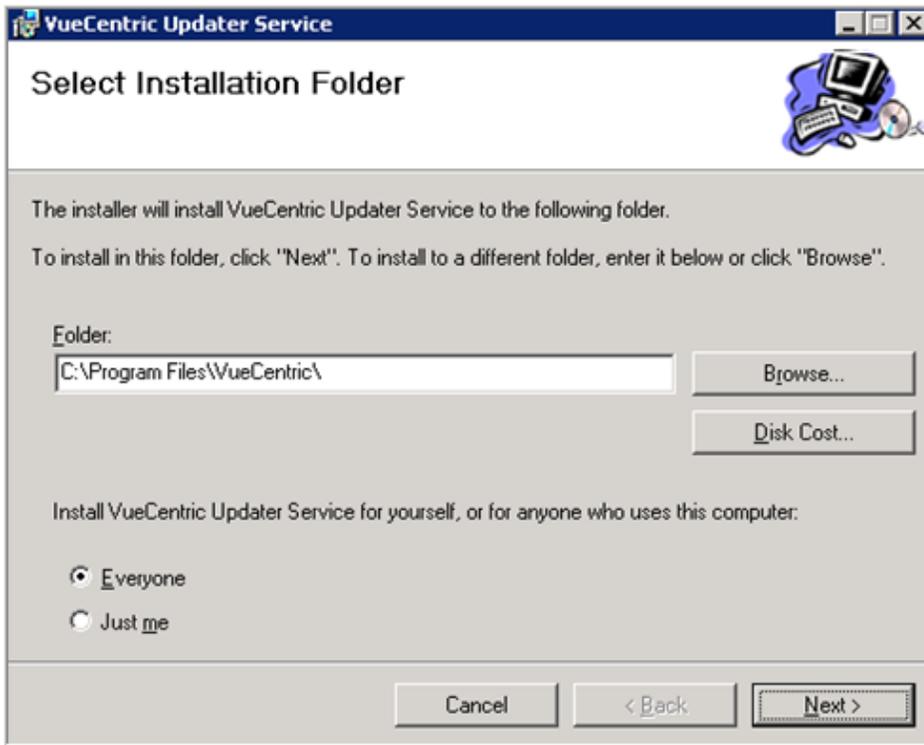


Figure 29. Select Installation Folder

7. Confirm to proceed with the installation.

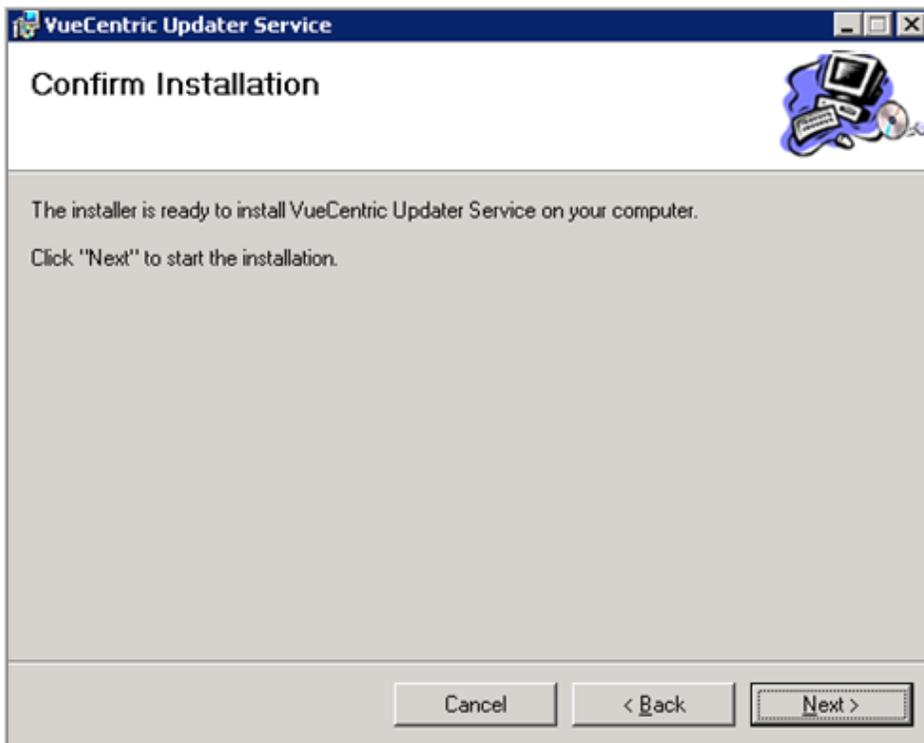


Figure 30. Confirm Installation

If the installation was successful, a notification appears stating that the service has been installed successfully.

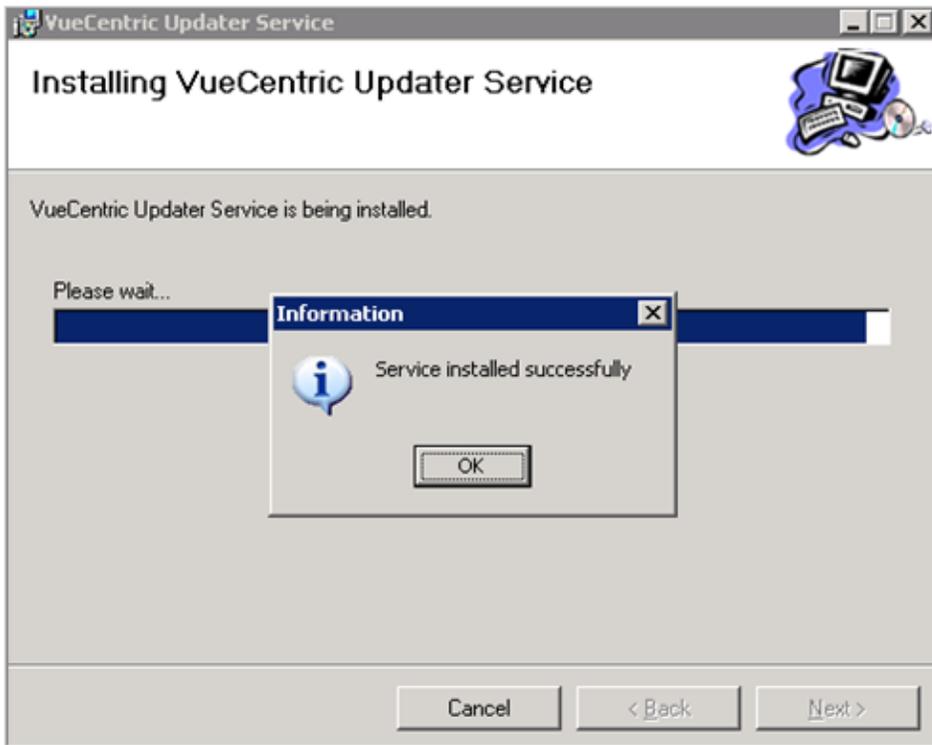


Figure 31. Service Installed Successfully

8. If the service fails to start, check the username and password provided to run the service and ensure they are correct.
9. Ensure that the Log on as a Service policy is defined on the workstation (either locally or at the AD level). The service may be configured independently of the installer by going to Start | Run and entering services.msc, then selecting the service, and choosing Properties.

Automated Installation

Automated installation of the VC Updater service may be performed by editing (preferably a copy of) vcUpdaterService_silent.msi to include the username and password of the account that the service runs under, as well as the path to the local CareVue client installation.

1. If an MSI editor is not available, obtain and install the Orca MSI editor (provided free of charge by Microsoft).
2. Locate the vcUpdaterService_Silent.msi found in the shared msi folder in the client repository, and create a copy of this MSI to perform modifications upon.
3. Open the new copy of the MSI in Orca (or other MSI editor).
4. Locate the Property table within the MSI.
5. Add a row to the Property table called USERNAME.
6. Set the value to the username created to run the VC Updater Service (including domain if required).

7. Add a row to the Property table named PASSWORD.
8. Set the value to the password associated with the account in the previous step.
9. If the CareVue client was installed in a location other than C:\Program Files\VueCentric, add a row to the Property table named TARGETDIR.
10. Set the value to the path where the CareVue client was installed. If this row is left undefined, the target path defaults to C:\Program Files\VueCentric.
11. Save the MSI.
12. Deploy the modified MSI via group policy or a third-party software deployment solution.

Customer Care Contact Information

Customer Care support hours are weekdays from 6:00 a.m. to 6:00 p.m. EST. To contact Customer Care, use one of the following methods:

- Phone:** 1-877-633-7743
- Email:** support@medsphere.com
- Web:** www.medsphere.org
- Fax:** 1-760-683-3701