Cincom Smalltalk™

Installation Guide

P46-0115-15

Contents

Introduction

This release of Cincom Smalltalk™ contains complete versions of VisualWorks® 7.6, ObjectStudio® 7.1.3 and ObjectStudio® 8.1, including object engines, virtual image, and add-on products. The release contains new features, as well as many fixes.

The release is distributed on two disk:

- one CD containing VisualWorks 7.6 and ObjectStudio 7.1.3

- one DVD containing ObjectStudio 8.1 and a collection of Smalltalk Daily podcasts, with James Robertson

This guide provides instructions for installing from either the downloadable Cincom Smalltalk Installer, a CD, or individual files downloaded from Cincom's FTP site. The installation of both commercial and non-commercial releases of VisualWorks 7.6 are discussed.

Installing Cincom Smalltalk

The Cincom Smalltalk installer is a VisualWorks application that installs VisualWorks and/or launches InstallShield to install ObjectStudio 7.1.3. The ObjectStudio 8.1 installer launches when that DVD is mounted. Instructions for each process are given separately; first for VisualWorks, then for the ObjectStudio releases.

When installing from a CD on MS-Windows, the second step in the installer presents the option of installing ObjectStudio in addition to VisualWorks. You may select either or both.

For both products the installation process consists of following the prompts offered by the installation program. The instructions given in this guide provide additional information that you might need to respond to some of the prompts.

The Installer application is developed in VisualWorks, and is available as a framework that you can use for your own application distributions. To explore the framework, load the VWInstaller parcels in the **`packaging/installer/`** subdirectory of the base installation.

System Requirements

ObjectStudio

ObjectStudio 7.1.3 and 8.1 runs on these Microsoft Windows platforms

- Microsoft Windows XP, Vista, 2000, or Server 2003

Disk and Memory Requirements

- 512 MB of memory recommended, minimum

- Apx. 65 MB disk space for OS 7.1.3

- Apx. 435 MB disk space forOS 8.1

  - 415 MB in Program Files (cincom/ObjectStudio8.1/)

  - 18 MB in the Home directory (/ObjectStudio8.1/)

- CD-ROM drive (for installing OS 7.1.3)

- DVD-ROM drive (for installing OS 8.1)

VisualWorks

VisualWorks 7.6 runs on workstations with the following minimum system configurations.

Disk and Memory Requirements

- 512 MB of memory recommended, minimum

- Apx. 610 MB disk space for default installation

- Apx. 780 MB disk space for full, single platform installation

- Apx. 1.2 GB disk space for full installation with all platforms

- CD-ROM drive (for installation)

Microsoft Windows

- A PC or compatible with an Intel 386 compatible or higher processor (Pentium or higher recommended)

- Windows 2000/Server 2000/XP(SP2 recommended)/Vista

Microsoft Windows CE

Virtual machines for Microsoft Windows CE are intended for use on CE devices as an application deployment environment. Minimum requirements are:

- CE devices running a x86-compatible or an ARM processor.

- Windows Pocket PC 2003 (Windows Mobile 2003)

Due to high variability in OS implementations on these devices, these requirements are necessary, but may not be sufficient. Refer to the Release Notes for additional information.

Installation is generally done by uploading software to these devices, so the CD-ROM general requirement does not apply.

HP-UX

- HP 9000 Series 700 workstation

- HP-UX Release 11.x

SUN Solaris

- Sun SPARC or SPARC64 system

- Solaris 8 (SunOS 5.8) or better

SGI IRIX

- An SGI IRIX 6.x machine with a MIPS processor

This VM has been tested on an entry-level SGI Indy under IRIX 6.2. Note that the threaded API for external interfaces is not supported yet, so VisualWorks effectively uses only one processor at a time.

Due to a problem in the processor hardware, VisualWorks 7.6 will crash on systems with an R4000 processor of revision 2.2 or older.

IBM AIX

- AIX workstation with PowerPC processor

- AIX release 5.x and up

Apple MacOS 9

- Apple MacOS computer

- MacOS 9.x

MacOS 9 is now deprecated, and VMs will no longer be provided as of the next major release.

MacOS 8.6 works with some caveats, and is a supported platform.

Apple MacOS X

- Apple MacOS computer
- MacOS 10.4 or higher

The MacOS X object engine is now distributed as a universal binary that will run on either PPC or Intel Macintosh computers.

Apple MacOS X - X11

- Apple MacOS computer
- MacOS 10.4 or higher
- X11 libraries for MacOS X

The MacOS X object engine is now distributed as a universal binary that will run on either PPC or Intel Macintosh computers.

Linux i386

- A PC or compatible with an Intel 386 compatible or higher processor (Pentium or higher recommended)

We have tested on Linux distributions supporting:

- glibc 2.1.3 or newer
- XWindows (X11R6)

A kernel of level 2.2 or newer should meet these requirements.

- For the 64-bit version of VisualWorks, an x86-64/EMT64 system (i.e., AMD x86-64 and compatibles such as Intel EMT64) with 256MB of physical memory is required, the Linux 86_64 kernel 2.4 or greater, and glibc version 2.3.2 or greater.

Some distributions (e.g., RedHat) include multiple compiles of the glibc libraries, provided in **/lib**, **/lib/tls**, and **/lib/i686** or similar directories which contain libraries for different OS ABI versions. For more information, see: http://people.redhat.com/drepper/assumekernel.html. If you use such a system and experience seemingly random crashes, refer to this web page. If the command:

> #> ldd /path/to/vwlinux86

indicates that **libc.so.6** is found in either **/lib/tls** or **/lib/i686**, you need to define **LD_ASSUME_KERNEL=2.2.5** in your environment prior to running VisualWorks. For example,

> #> env LD_ASSUME_KERNEL=2.2.5 /path/to/vwlinux86 image.im

Or, set it for the shell. For C-shell:

#> setenv LD_ASSUME_KERNEL=2.2.5

and for Bourne/Korn shell:

#> LD_ASSUME_KERNEL=2.2.5; export LD_ASSUME_KERNEL

Doing this will cause the loader to use the correct libc files.

Linux PowerPC

• A PowerPC-compatible processor

• A linux distribution with a 2.4.x kernel or higher

• XWindows (X11R6)

See the notes for Linux i386 above for additional information.

Getting Help

If, after reading this document, you find that you need additional help, *commercial licensees* can contact Cincom Technical Support. Cincom provides all customers with help on product installation. For other problems there are several service plans available. For more information, send email to supportweb@cincom.com.

VisualWorks Non-commercial licensees can get help on-line from the resources listed in the VisualWorks *Application Developer's Guide*.

Before contacting Technical Support, please be prepared to provide the following information:

• The release number, which is displayed when you start VisualWorks.

• Any modifications (patch files, auxiliary code, or examples) distributed by Cincom that you have imported into the image.

• The complete error message and stack trace, if an error notifier is the symptom of the problem. To do so, use **Copy Stack**, or select and copy the text in the error window, and paste the text into a file that you can send to Technical Support.

• The hardware platform, operating system, and other system information you are using.

You can contact Technical Support using any of the following methods:

E-mail	Send questions about VisualWorks to: supportweb@cincom.com.
Web	Visit: http://supportweb.cincom.com and choose the link to Support.
Telephone	Within North America, call Cincom Technical Support at (800) 727-3525.
	Outside North America, contact the local authorized reseller of Cincom products.

Installing VisualWorks

The procedures described in this section install VisualWorks 7.6.

The VisualWorks Installer application is the recommended option for most developers. This may be downloaded directly from Cincom's web site or run from the Cincom Smalltalk CD-ROM (commercial or non-commercial edition).

To begin, see "Running the VisualWorks Installer" (below).

Experienced VisualWorks users may prefer simply to copy (drag-and-drop) the compressed components from the CD or Cincom's web site to a target directory (this is for non-commercial installations only). Configuration details, such as setting paths and file associations, must be performed manually, but these steps are not described here.

For details, see "Installing VisualWorks from Downloaded Files" (below).

Running the VisualWorks Installer

The VisualWorks Installer sets up the required directory structure on a workstation disk drive and copies the selected components into that structure. The Installer can copy the VisualWorks components from CD or directly from Cincom's web site. Instructions are displayed by the installer as responses are needed. On UNIX and Linux systems, the Installer explains how to set up your UNIX environment variables.

A non-commercial CD can be burned from a CD image file (ISO), which is also downloadable from the website.

Installing via the Internet

The VisualWorks Installer is available for free download from the Cincom Smalltalk web site:

> http://smalltalk.cincom.com/downloads/

To install VisualWorks from the web site, register as a developer and download the executable file that is appropriate for your platform. Executables for most supported platforms are available (users wishing to install on other platforms must use the Cincom Smalltalk CD or download individual files as described in subsequent sections of this guide).

To continue installing via the Internet, run the Installer application and follow the steps described in "Choosing a Typical Installation" below.

Installing from the Cincom Smalltalk CD-ROM

On most platforms, the Installer starts automatically when you insert the Cincom Smalltalk CD. If it does not start automatically, start it using the method appropriate to your platform, located in the CD's root directory:

Windows: Double-click on the **installWin.bat** command script file.

UNIX/Linux: Execute the installer shell script **installUnix**.

MacOS9.x: Launch the **InstallMac** AppleScript. Alternately, view the CD's contents as a list, expand the **vw7.6:bin:powermac** folder and the **image** folder. Drag **install.im** onto the **visual** object engine.

MacOS X: Double-click on the **installMacOSX.command** script file. Alternately, view the CD's contents as a list, expand the **/vw7.6/bin/macx** folder and the **image** folder. Drag **install.im** from the **image** folder onto the **visual.app** object engine.

Choosing a Typical Installation

Upon startup, the Installer provides the option to perform a typical or custom installation, or to uninstall a previous version of VisualWorks.

1   For new developers, a **Typical Install** is recommended. Select this option and proceed by clicking on **Next**.

If you wish to customize the installation (i.e., choose a different installation directory, include or omit specific VisualWorks components), follow the steps described in "Choosing a Custom Installation" below.

2   The Installer retrieves the most recent versions of VisualWorks that are available on the Cincom web site.

While contacting the web site for version information, this step also checks for an update to the Installer itself. If one is available, you may download and install it immediately by clicking on **Apply Updates**.

If the Installer finds a previous "typical" installation, it assumes you wish to make changes or add components, as in a "custom" install.

For details, see "Choosing a Custom Installation" below.

3   Review the summary of installation options:
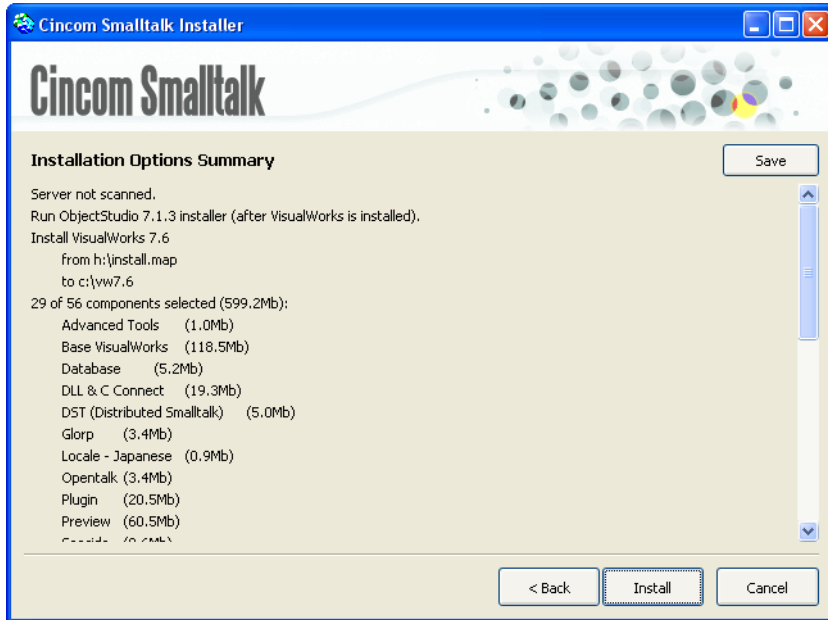
4   If the default options (product version, installation directory, components) are all suitable, click on **Next** to proceed.

If you wish to change or customize any of these options, click on **Back**, return to the first page and choose **Custom Install**. Then, follow the steps described in "Choosing a Custom Installation".

5   For non-commercial distributions, review the license agreement. Select **I Accept**, and click **Install**.

The Installer shows progress as each component is copied to the local disk of your workstation.

After all components have been installed, the Installer indicates successful completion:

6 Click **Exit** to finish.

At the end of the installation process:

Platform	Actions
MS-Windows	The system registry is updated automatically.
UNIX	An informational screen is displayed with instructions for setting your UNIX system variables (this information is also saved in a text file called **userActions.txt**, located in the install directory).
MacOS 9.x	A special environment variable file is created in the **Preferences:VisualWorks Prefs** folder of the current operating system installation.

This completes the "typical" installation.

Choosing a Custom Installation

A custom installation allows you to choose the version of VisualWorks to install (not merely the most recent), the target directory, and the specific components you wish to install.

Selecting this option enables you to choose among the most recent versions of VisualWorks that are available on the Cincom web site.

1 To begin, select **Custom Install**, and proceed by clicking on **Next**.

2 On the following page, you may choose among the latest available versions on Cincom's web site by clicking on **Check Server**. If you are installing from a CD, you may skip this step by clicking on **Next**.

While contacting the web site for version information, this step also checks for an update to the Installer itself. If one is available, you may download and install it immediately by clicking on **Apply Updates**.

Once the Installer has finished scanning the web site, click on **Next**.

3 Select a product and version to install.
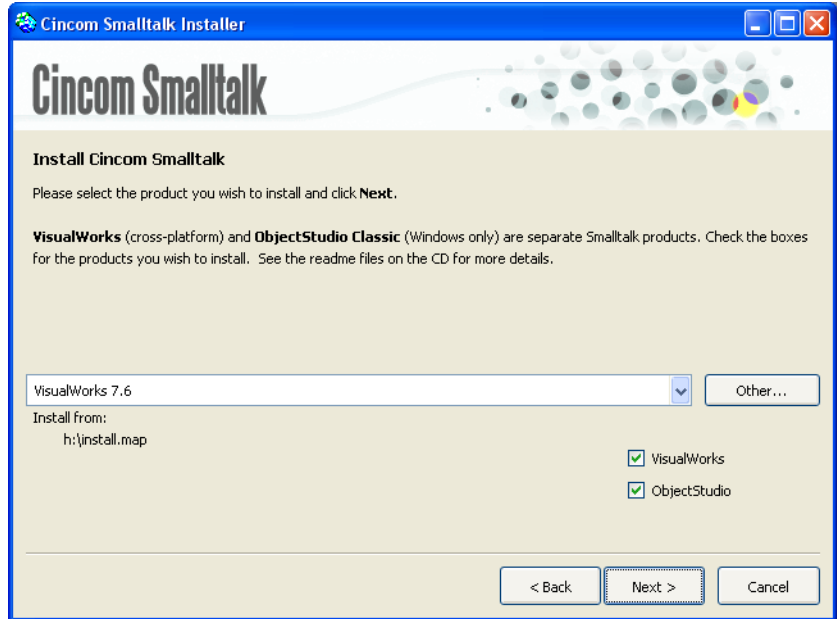
All available products and versions are shown in the drop-down list. Selecting one item causes the Installer to fetch additional details (these may take a few seconds to display).

When installing from a CD on MS-Windows, you may select either or both ObjectStudio or VisualWorks. Selecting ObjectStudio will launch its **setup.exe** install script once VisualWorks has been installed.

Optionally, you may specify the full path to an **install.map** file by clicking on the **Other...** button. Generally, the path should be to the root of the distribution CD (e.g., **D:\install.map**), but you may also specify an URI (e.g., **ftp://...**).

4 Choose the version you wish to install, and click **Next**.

5   Specify the installation directory.
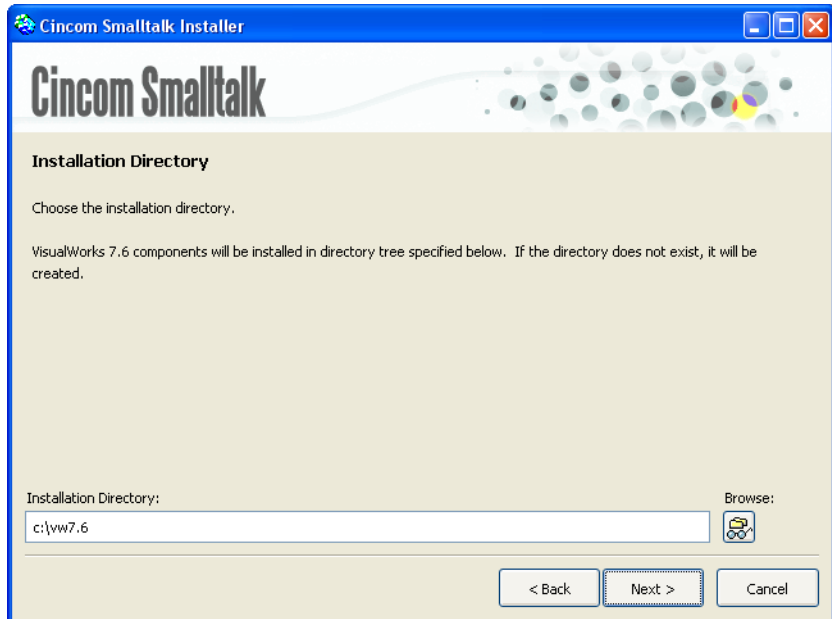
The directory shown as a default by the Installer is typical for the platform you are installing.

If the default does not suit your needs, edit it to specify the new install directory (e.g., **c:\Program Files\vw7.6** on MS-Windows systems, or **/usr/local/vw7.6** on UNIX or Linux systems). Click on **Browse...** to examine the directory hierarchy.

> **Tip:** If you have previous versions of VisualWorks installed, we recommend installing into a new directory rather than installing over a previous version. This prevents potential incompatibilities from mixed versions of component files, and allows you to run previous version(s) as well.

If the specified directory does not exist (typically the case for a new installation), it will be created for you.

6   Click **Next**.

7 Select the VisualWorks components you want to install.
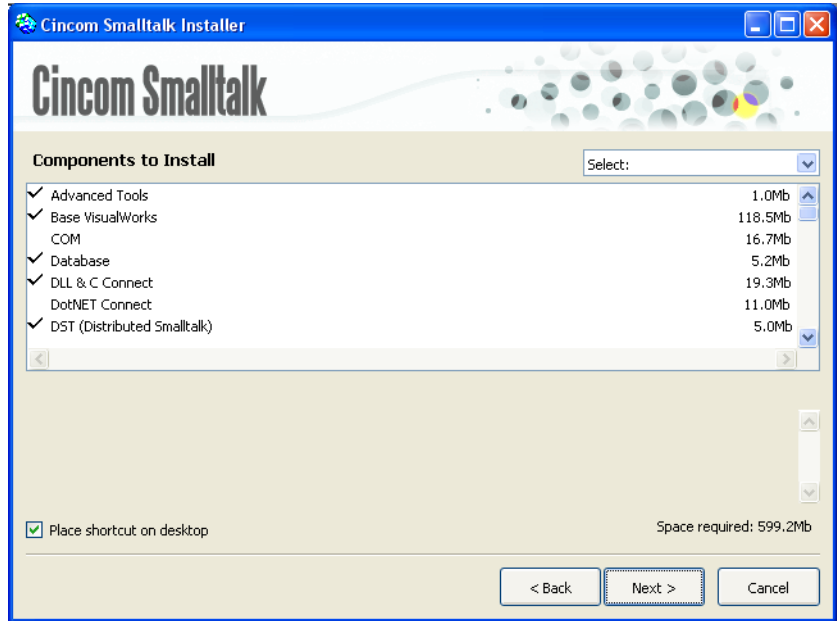
By default, the components for a typical installation are pre-selected. To select or deselect a component, click on it in the list. Select at least the **Base VisualWorks** component and the **VM** (virtual machine) component for your platform, which are the minimum requirement for a working installation.

Brief descriptions for the components are shown in the lower half of the window when the cursor hovers over their names (refer to their documentation for fuller descriptions).

When you have made all your selections, click **Next**.

8   Review the summary of installation options:
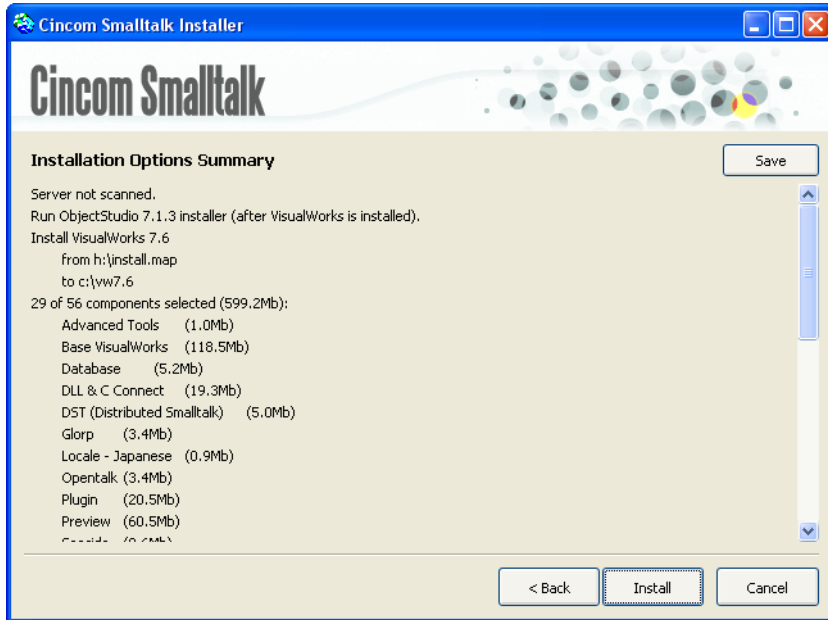
If the default options (product version, installation directory, components) are all suitable, click on **Next** to proceed.

If you wish to change or customize any of these options, click on **Back**.

9   For non-commercial distributions, review the license agreement. Select **I Accept**, and click **Install**.

10 The Installer shows progress as each component is copied to the local disk of your workstation:

If you are installing over a previous installation (such as a pre-release), you will be prompted for the action to take if a file already exists. Selecting **Overwrite** replaces the currently installed file; **Update** replaces the currently installed file only if it is older than the new one; **Skip** keeps the original file. A checkbox allows you to specify use of the choice for all subsequent actions.

11 The Installer indicates successful completion:

12 Click **Exit** to finish.

At the end of the installation process:

Platform	Actions
MS-Windows	The system registry is updated automatically.
UNIX	An informational screen is displayed with instructions for setting your UNIX system variables (this information is also saved in a text file called **userActions.txt**, located in the install directory).
MacOS 9.x	A special environment variable file is created in the **Preferences:VisualWorks Prefs** folder of the current operating system installation.

This completes the installation.

Installing Additional VisualWorks Components

After the initial VisualWorks installation, you can use the Installer application again to install additional add-on components.

1 If you installed from the Cincom Smalltalk CD, load it in your computer's CD-ROM drive.

2 Start the installer:

Windows: Go to **Start → Programs → VisualWorks 7.6 → Install/Uninstall**

UNIX: Execute the script `vw7.6nc/Install_Uninstall`

MacOS: Double-click on the installation image file `vw7.6nc:image:install.im`

3 Once the Welcome screen appears, select **Custom Install**, follow the initial steps as described in the previous section, clicking **Next** until you reach the **Components to Install** screen.

4 Select the components you wish to add, and click **Next**.

5 When the installation is complete, click **Close** to exit.

Installing VisualWorks from Downloaded Files

The non-commercial release of VisualWorks 7.6 is available for free download from the Cincom Smalltalk web site:

http://www.cincom.com/smalltalk/

From this web page, follow the download links for **VisualWorks Non-Commercial**. This distribution is also provided as a set of files on Cincom's FTP site, each file containing some major component of VisualWorks. You probably do not need to download the entire distribution, but are free to do so.

There is no installer program for the distribution of individual files on the FTP site. Rather, you simply extract the contents of the compressed files and configure VisualWorks appropriately for your platform.

The compression format, **.tar.gz**, is common on UNIX platforms, but is handled well by decompression utilities on other platforms as well. (Note that the MacOS virtual machine is in another format, **.sit**, which is common on that platform.)

- On Windows platforms, use WinZip 7.0 or later, available from http://www.winzip.com.

- On MacOS systems, use Dropstuff (5.5 or later) or StuffIt Deluxe (5.5 or later), with Expander

UNIX and Linux Installation

1. Create an installation directory called **vw7.6nc** in an appropriate directory, for example **/usr/local/vw7.6nc**.

2. Download the compressed files to the installation directory.

   The product is divided into several files, and you probably to not need to download them all. You do need at least the VisualWorks Base and a virtual machine file. The files are described on the download page to guide your selection.

3. Change (**cd**) to installation directory, where you downloaded the files.

4. Extract each file using these commands:

   ```
   %gunzip <file_name>.tar.gz
   %tar -xvf <file_name>.tar
   ```

   All VisualWorks files are extracted into it in the correct directory structure. Additional subdirectories are created as needed.

5   Configure your environment to set this variable:

       `VISUALWORKS` - e.g., to the value: **`/usr/local/vw7.6nc`**

Set this in the appropriate startup file.

This completes the installation.

Windows Installation

> **Note:** On Windows 2000, you must have Power User permissions in order to install software. User permission alone does not permit updating the system registry.

1   Create an installation folder called **`vw7.6nc`**, e.g.: **`c:\vw7.6nc`**.

2   Download the compressed files to the installation folder.

The product is divided into several files, and you probably to not need to download them all. You do need at least the VisualWorks Base and a virtual machine (VM) file. The files are described on the download page to guide your selection.

3   Start WinZip 7.0 or later.

Open **Options → Configuration → Miscellaneous**, and uncheck **TAR file smart CR/LF conversion**.

4   Open the base VisualWorks downloaded file in WinZip.

You will be prompted, asking whether WinZip should decompress the single file into a temporary folder and open it. Click **Yes**. The temporary file is created in **`\windows\temp`**, and has the same file name except for having only a **`.tar`** extension. This file will be deleted when WinZip exits.

WinZip then displays the contents of the **`.tar`** file.

5   Extract the contained files into the installation directory (**`vw7.6nc`**).

All VisualWorks files are extracted into it in the correct directory structure. Additional subdirectories are created as required.

6   Repeat steps 3 and 4 for each of the other files as well, selecting the same installation directory (e.g., **`c:\vw7.6nc`**) each time.

When you have extracted all of your downloaded files, the VisualWorks files are all installed in their propoer locations. The directory structure, viewed in the Windows Explorer, should look

something like this (though you will probably have more directories than shown here):
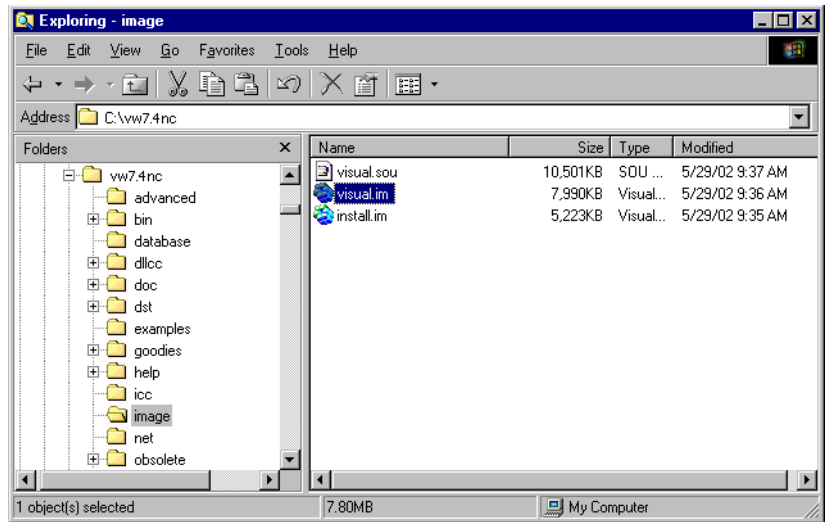
That's all there is for installation. But now there is some Windows configuring to make launching reasonably easy.

7   Explore the **vw7.6nc\image** directory, select an image file (**visual.im**), and double-click on it.

The **.im** file type so far should have no association, so a prompter opens asking for the executable.

8   Click **Other**... to open a file browser. Find and select **visual.exe** (probably in **c:\vw7.6nc\bin\win**), and click **Open**.

(The **visualworks.exe** file is an alternative option, but really only useful if you have multiple versions of VisualWorks installed. This is described in the *Application Developer's Guide*.)

9   Check the **Always use this program…** checkbox, and click **OK**.

VisualWorks is now installed, and you can launch it by double-clicking on an image (**.im**) file in the Windows Explorer.

This completes the installation.

MacOS Installation

1 Create an installation folder called **vw7.6nc**.

2 Download the compressed file(s) to the installation folder.

Download at least the VisualWorks Base and a virtual machine file. The others are optional. To guide your selection, the files are described on the download page.

3 Start Dropstuff or StuffIt Deluxe with Expander.

Open the Expander **Preferences** and, in the **Cross Platform** options, choose **Never** for **Convert Text Files to Macintosh text format**.

4 Extract each file. A separate **vw7.6nc** folder is created for each file.

5 Move the contents of all **vw7.6nc** folders to a single folder (note that you must select the contents of each folder, because MacOS replaces folders rather than merging their contents).

6 (MacOS 9.x) Open the folder **vw7.6nc:bin:powermac** and find the compressed VisualWorks virtual machine, named **vw7.6.sit**. Extract this file (using StuffIt) into the same directory.

(MacOS X) Open the folder **vw7.6nc/bin/macx** and find the compressed VisualWorks virtual machine, named **vw7.6.sit**. Extract this file (using StuffIt) into the same directory.

This completes the installation.

Starting VisualWorks the First Time

With VisualWorks installed, you can now launch a VisualWorks session.

Depending on your operating system, there may be several ways to launch a session. For example, on Windows systems, a VisualWorks launcher icon is added to your **Start** menu (in a folder under the **Programs** item), or you can double-click on an image file to launch using the file association feature, or you can run a command line in a shortcut.

Under MS-Windows and MacOS systems, the simplest way to launch VisualWorks is by double-clicking on the file **visual.im**, located in the **image** directory of your VisualWorks **7.6** installation.

Regardless of the operating system, however, the various ways to start VisualWorks all do the same thing. The following describes how to launch a VisualWorks session on any system. This information will make it clear what to do to make any platform launcher features work as well.

Launching from the Command Line

To start VisualWorks, you run the object engine (also called the virtual machine) with the image file passed as the argument:

> ***object_engine image_file***

On MS-Windows systems, the virtual machine name is **`visual.exe`**, and on MacOS and Unix system it is simply **`visual`**. By default, the virtual machine is installed in the **`bin/<platform>`** subdirectory of the root VisualWorks installation directory.

The initial image file on all platforms is **`visual.im`**, (**`visualnc.im`** for non-commercial) and is installed in the **`image`** subdirectory. The image is exactly the same on all platforms. This file should be write-protected, and you should never save over it. Instead, you will want to save one or more "working" images and use those for your development work.

To launch VisualWorks the first time then, using this command line interface, start by changing to the **`image`** subdirectory, and execute the object engine with the image as argument. For example, on Windows:

```
> cd c:\vw7.6nc\image\
> ..\bin\win\visual.exe  visual.im
```

and on a UNIX or Linux system:

```
$ cd /usr/local/vw7.6nc/image
$ exec ../bin/linux86/visual visual.im
```

Note that the paths may be different on your system. This approach makes the image directory the current directory for execution, so images will be saved there by default.

On Mac OS X, you must use the **`open`** command:

```
user% open -a visual.app visual.im
```

On some platforms, there are several engines you can use, as described in the *Application Developer's Guide*. For development work, it is recommended that you use the engines named **`vw<platform>`**, such as **`vwnt.exe`** for Windows platforms, and **`vwlinux86`** on Linux. Using these engines can make debugging easier in case of an engine crash.

When successfully launched, the VisualWorks splash screen is displayed for a few moments. (For VisualWorks Non-Commercial installations, the NC licensing agreement is displayed; read it and click **I Accept** or **Quit**.)

Then, the VisualWorks Launcher and a Workspace are displayed.
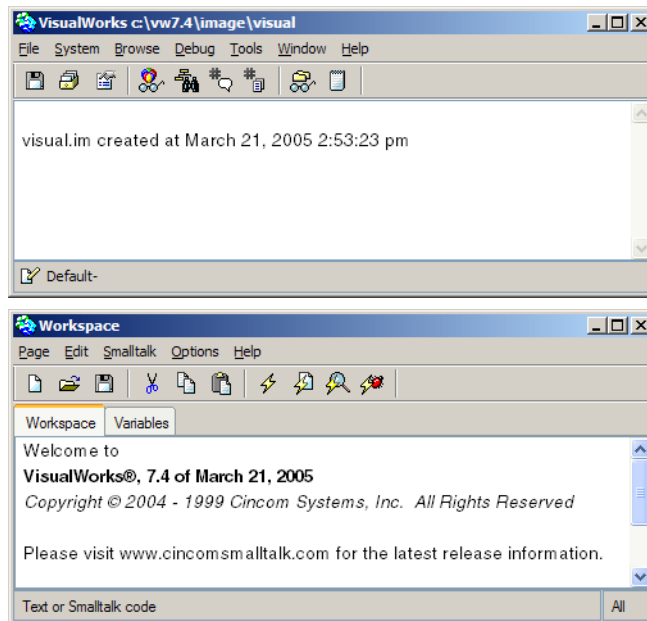
In order to correctly find additional files, the VisualWorks Home directory must be properly set. Select **File → Set VisualWorks Home** in the Launcher window. A **Settings** window opens, as follows:
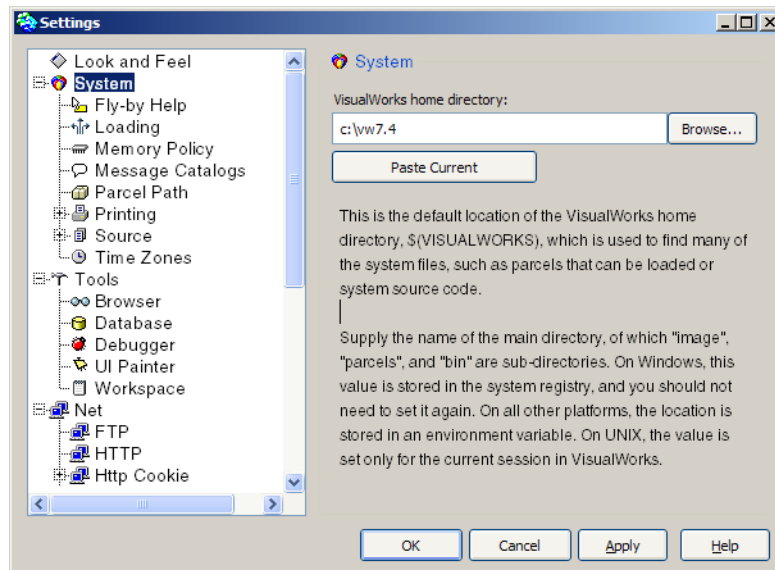
Set the VisualWorks **Home Directory** to the root VisualWorks installation directory, typically **`c:\vw7.6nc`** on Windows systems or **`/usr/local/vw7.6nc`** on UNIX or Linux systems. Then click **OK**.

On Windows systems, the VisualWorks Home is saved in the system registry. On UNIX and Linux systems, it needs to be set in a system variable, as described in an information screen at the end of the installation (and in the file **`userActions.txt`**).

Now, before doing any other work, save a working image. This will be the image you use to save your work, leaving **`visual.im`** unchanged. Select **File → Save Image As…** in the Launcher to display the **Save Image** dialog:
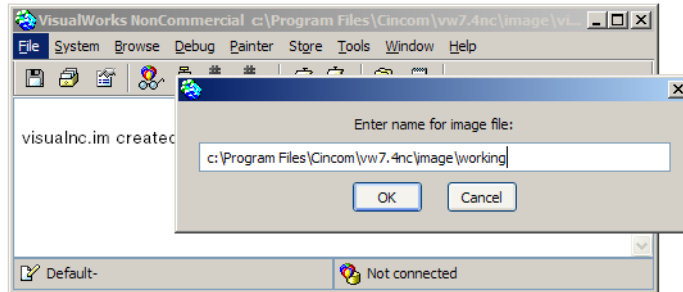
Enter a name for your working image, such as **working**, and click **OK**. This will save the image as **`working.im`** and create a **`working.cha`** file also (see the *Application Developer's Guide* for further discussion of these files). *Do not* include either extension (**`.im`** or **`.cha`**) when specifying the file name in this dialog.

Since we launched VisualWorks with **`image`** as the current directory, **`working.im`** and **`working.cha`** will be saved into that directory. For another directory, specify either a relative or absolute path.

You are now ready to start working with VisualWorks. Additional setup suggestions are provided below, but the essential setup is now complete.

Loading Parcels

VisualWorks is divided into separate *parcels*, which are external Smalltalk binary and source code components (also known as *packages*). By selectively loading and unloading parcels, you can control the size of the image, adding only the functionality you need. Loading parcels is much faster than loading and compiling Smalltalk source code.

To load a parcel/component that has already been installed by the Cincom Smalltalk Installer:

1 Start VisualWorks, and open the Parcel Manager (click on **System → Parcel Manager** in the Launcher):
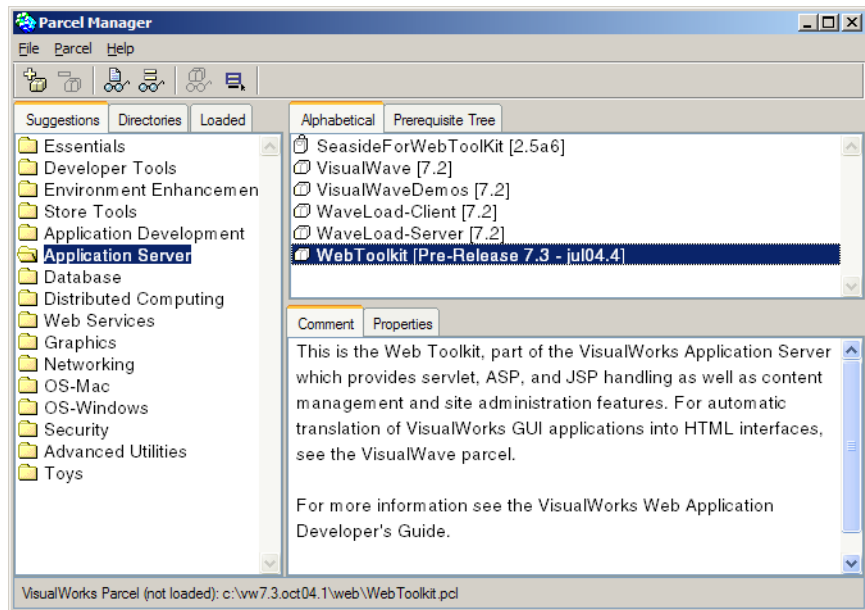
2 Browse the categories (folders) of parcels under the **Suggestions** tab, especially the **Essentials** and **Developer Tools** categories.

VisualWorks has default parcel paths for many add-on products, but if the path for the product you are installing is either not set, or is set incorrectly, the parcel will not appear in the parcel list. In this case, an additional path needs to be added.

To add or correct the parcel path for the product you are installing, use the **Parcel Path** page in the Settings Tool (**System → Settings**).

3 To load a parcel in the Parcel Manager, select the desired parcel and then pick **Parcel → Load**.

A dialog may open, explaining that additional code may be loaded. Typically you should click the **yes to all** button to continue.

Additional configuration may be required by add-on products. If so, instructions are provided in the configuration or installation instructions for that product.

Each parcel file (**`.pcl`**) has an associated source file (**`.pst`**) that holds the source for all the code in the parcel. Both files are effectively binary and must not be altered except by the parcel publishing mechanism. If you extract parcels from an archive (zip) format, you should disable any conversion options provided by your archiver. For example, if you use WinZip, turn-off **Tar file smart CR/LF conversion**. Failure to do so will result in errors when trying to browse the source for a parcel within VisualWorks.

Setting Up a Network Environment

The section "Starting VisualWorks the First Time" (above) includes instructions for configuring a stand-alone, single-user environment. In a networked environment there are additional considerations. The following recommendations are targeted at this networked style of configuration.

Here is a recommended setup:

1 Make all the original installation files and directories read-only.

While this is a good idea in a single-user environment as well, it is especially important in multi-user environments. Allowing several developers to write to the same files will cause serious data corruption errors.

2 Each user creates directories for their own images and parcels.

Typically, this will be on the users' local drives or in their private working area of a network drive. For example:

On Windows:

> **`c:\vwwork\myimages`**
>
> **`c:\vwwork\myparcels`**

On UNIX/Linux

> **`<yourhome>/myimages`**
>
> **`<yourhome>/myparcels`**

3 Set up a launcher mechanism (e.g., shortcuts on Windows, or execution scripts on UNIX) to run the shared virtual machine, but with the programmer's personal image directory as the "current" directory.

For example, in a Windows shortcut, specify the user's personal image directory as the **Start in:** directory. On UNIX systems, a startup command file can be created in the user's **`bin/`** directory which can be executed while the personal image directory is "current," but invoking the shared object engine. (Examples of both of these setups

are included by the installer.) Refer to the VisualWorks *Application Developers Guide* for more setup details.

4 Start VisualWorks on the original image (**visual.im**), and open the Settings Tool (**System → Settings**). On the **Parcel Path** page, add your parcels directory (created in step 2).

This will include the user's personal working parcels in lists of parcels available for loading. You can drag the new name to the top of the list to have it searched first.

5 Select **File → Save Image As...** in the Visual Launcher, and save a *working* image.

Enter a name for the image, such as **working**, including path information to your own image directory (step 2).

Because the original image is a read-only (step 1) file, you will not be able to save over it.

6 When saving a parcel, programmers specify the path to their personal parcels directory.

Specifying a relative pathname, especially one relative to the VisualWorks home directory, facilitates moving the image to other platforms. The directory path specified is remembered and proposed as the path in subsequent saves of that parcel.

7 When starting VisualWorks, make the directory containing your image file the current directory before launching VisualWorks.

Uninstalling Products

The VisualWorks Installer comes with an uninstall option. To use it:

1 *Windows:* From the **Start** menu, select **Programs** ➞ **VisualWorks 7.6nc** ➞ **Install/Uninstall**.

 UNIX: Execute the script **~vw7.6nc:/Install_Uninstall**.

 MacOS: Double-click **~vw7.6nc:image:install.im**

2 On the **Install or Uninstall** page of the Installer, select **Uninstall** and click **Next**.

 The Installer will display all VisualWorks installations in the drop-down menu. Select the product you wish to uninstall and click **Next**.

3 The Uninstaller will prompt you for the disposition of various aspects of the VisualWorks installation, such as whether you want to delete non-empty directories. Answer these prompts accordingly.

4 When the Uninstaller is finished, you may need to manually remove files and/or directories, such as directories containing files that you created using VisualWorks.

Installing ObjectStudio 7

The procedures described in this section install ObjectStudio 7.1.3 from the Cincom Smalltalk CD-ROM (commercial or non-commercial edition). A non-commercial CD can be burned from a CD image file (ISO), which is downloadable from the Cincom Smalltalk website.

The installation is performed using InstallShield, which sets up the required directory structure on the specified disk drive and copies the ObjectStudio files into that structure. Instructions are displayed by the installer as responses are needed.

Running the Installer

If you select the ObjectStudio checkbox in the Cincom Smalltalk installer, InstallShield starts automatically once the VisualWorks installation is completed.

Otherwise, you can execute the ObjectStudio installer directly from the CD by running `\ostudio\disk1\SETUP.EXE`.

The installation proceeds through several pages of instructions, collecting installation parameters. Once the information is gathered, the necessary directories are created and the ObjectStudio files are copied into them.

Because the installation involves installing a few Windows DLL files, the installation recommends that you close all other applications during the installation. On Windows95, it is also necessary to reboot the computer after installation before running ObjectStudio.

Installation Options

Components

Several components are optional. By default, all are selected for installation. You can deselect components that you do not expect to use.

Brief descriptions of the components are provided in the installer. For full descriptions, refer to the ObjectStudio documentation after completing the installation.

You can install any components later by rerunning the installer.

Program Group Options

You have the choice of installing ObjectStudio in either:

- Common program group, which makes ObjectStudio available to all users of this computer, or

- Personal Program group, which makes ObjectStudio available to the currently logged in user only.

Installing ObjectStudio 8

The procedures described in this section install ObjectStudio 8.1 from the Cincom Smalltalk DVD.

The installation is performed using InstallShield, which sets up the required directory structure on the specified disk drive and copies the ObjectStudio files into that structure. Instructions are displayed by the installer as responses are needed.

Running the Installer

The installer launches when you mount the ObjectStudio 8.1 DVD. Alternatively, you can execute the ObjectStudio installer directly from the DVD by running **\ostudio\disk1\SETUP.EXE**.

The installation proceeds through several pages of instructions, collecting installation parameters. Once the information is gathered, the necessary directories are created and the ObjectStudio files are copied into them.

Because the installation involves installing a few Windows DLL files, the installation recommends that you close all other applications during the installation.

Installation Options

Components

Several components are optional. By default, all are selected for installation. You can deselect components that you do not expect to use.

Brief descriptions of the components are provided in the installer. For full descriptions, refer to the ObjectStudio documentation after completing the installation.

You can install any components later by rerunning the installer.

Program Group Options

You have the choice of installing ObjectStudio in either:

- Common program group, which makes ObjectStudio available to all users of this computer, or

- Personal Program group, which makes ObjectStudio available to the currently logged in user only.

Thank You...

... for installing and trying Cincom Smalltalk. We hope, and expect, that you will find this to be an enjoyable and productive development environment.

There are a variety of resources available to help you become productive with VisualWorks and ObjectStudio. Complete documentation is provided for both products. *The VisualWorks Walk Through* provides a simple overview of building an application in VisualWorks.

A variety of web sites also provide information for VisualWorks developers. See in particular:

*   The Cincom Smalltalk Wiki:

    http://www.cincomsmalltalk.com
*   The University of Illinois Urbanna-Champagne hosts a wiki server for VisualWorks organized by its user community at:

    http://wiki.cs.uiuc.edu/VisualWorks