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Installing Cincom Smalltalk

This release of Cincom Smalltalk™ contains complete versions of VisualWorks® 7.8 and ObjectStudio® 8.3, 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 7.8
- one DVD containing ObjectStudio 8.3 and a collection of Smalltalk Daily podcasts, with James Robertson

System Requirements

ObjectStudio

ObjectStudio 8.3 runs on these Microsoft Windows platforms

- Microsoft Windows 7, XP, Vista, Server 2003

Disk and Memory Requirements

- 512 MB of memory recommended, minimum
- Apx. 435 MB disk space
- 415 MB in Program Files (cincom/ObjectStudio8.3/)
- 18 MB in the Home directory (ObjectStudio8.3/)
- DVD-ROM drive
VisualWorks

VisualWorks 7.8 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 Pentium compatible processor
- Windows 7, XP SP2, Vista, Server 2003

**HP-UX**

- HP 9000 Series 700 workstation
- HP-UX Release 11.x

**Sun Solaris**

- 32-bit requires at least SPARC V7 processor architecture
- 64-bit requires at least SPARC V9 processor architecture
- Solaris 8 (SunOS 5.8) or better

**IBM AIX**

- AIX workstation with PowerPC processor
- AIX release 5.3, 6.x, or 7.x

**Apple Mac OS X - Aqua**

- Mac OS X Leopard (10.5), or Snow Leopard (10.6)

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

**Apple Mac OS X - X11**

- Mac OS X Leopard (10.5), or Snow Leopard (10.6)
- X11 libraries for Mac OS X
The Mac OS X object engine is now distributed as a universal binary that will run on either PowerPC or Intel Macintosh computers.

**Linux x86/x86-64**
- 32-bit requires a Intel Pentium compatible processor
- 64-bit requires an AMD x86-64 compatible processor
- Linux kernel version 2.4 or later
- GNU glibc version 2.2 or later

**Linux PowerPC**
- A PowerPC compatible processor
- Linux kernel version 2.4 or later
- GNU glibc version 2.2 or later

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**Getting Help**

If, after reading this document, you need additional help:

- Commercial licensees can contact Cincom Technical Support. Cincom provides help on product installation. For other issues, send email to helpna@cincom.com.

- 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:

<table>
<thead>
<tr>
<th>E-mail</th>
<th>Send questions about VisualWorks to: <a href="mailto:helpna@cincom.com">helpna@cincom.com</a>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web</td>
<td>Visit: <a href="http://supportweb.cincom.com">http://supportweb.cincom.com</a> and choose the link to Support.</td>
</tr>
<tr>
<td>Telephone</td>
<td>Within North America, call Cincom Technical Support at (800) 727-3525. Outside North America, contact the local authorized reseller of Cincom products.</td>
</tr>
</tbody>
</table>
VisualWorks can be installed either from CD or by download from the Cincom Smalltalk website (non-commercial only).

The VisualWorks installer is the recommended option for most users. The installer launches automatically from the distribution CD, or can be downloaded from the Cincom Smalltalk Download site.

Experienced VisualWorks users may prefer simply to extract files from the CD or website. Configuration details, such as setting paths and file associations, must be performed manually. Detailed instructions for this installation style are provided on the download page.

Running the VisualWorks Installer

The VisualWorks Installer can be run from either the Cincom website (non-commercial version only) or a distribution CD (commercial or non-commercial versions).

- To install from the web, visit the Cincom Smalltalk Download site. Select Cincom Smalltalk, and then select to install the Net Installer. Once installed, the Installer starts.

- To install from the Cincom Smalltalk CD, insert the CD in a drive. On many systems the Installer starts automatically. If it does not, start it using the method appropriate to your platform:
  - Windows: Double-click on the installWin.bat script file.
  - UNIX/Linux: Execute the installer shell script installUnix.
  - Mac OS X: Double-click on the installMacOSX.command file.
Upon startup, the Installer provides installation options.

Select and follow the instructions for either of the installation options:

- **“Typical” Installation**, which installs the most popular components for the current platform, or
- **“Custom” Installation**, which gives you complete control over the components to install and the installation location.

Select an option click **Next**. Follow the onscreen instructions to complete the installation.

After all components have been installed, the Installer indicates successful completion. Click **Exit** to finish.

This completes the installation.

For Mac OS X, Linus, and Unix installations an informational screen is displayed with instructions for setting your UNIX system variables. This information is also saved in the text file `userActions.txt`, located in the install directory.

**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 7.8 > Install/Uninstall

   UNIX: Execute the script vw7.8nc/Install_Uninstall

   MacOS: Double-click on the installation image file vw7.8nc: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.

---

Starting VisualWorks the First Time

Depending on your operating system, there may be several ways to launch a session.

The preferred method is to launch the Project Manager, and create or open a project image from that central point. On Windows and MacOS platforms, a desktop icon is available to launch the Project Manager.

On all platforms, command-line execution is an option as well. Refer to the Application Developer’s Guide for the full range of these options.

Project Manager

The VisualWorks Project Manager is a simple application (LaunchPad.im) that helps you manage (create, launch or delete) your VisualWorks development projects.

Each project is created as a Smalltalk image file in its own directory, which the manager creates in a user-writable location separate from the VisualWorks installation.
The VisualWorks installer places a **VisualWorks Projects** launcher on the desktop (a shortcut on Windows, or an applet on Mac OSX), which starts the LaunchPad application.

With the LaunchPad application, you can

- Create and launch a new project (with the `[+]` button)
- Launch an existing project (with its arrow button)
- Remove an existing project (with its `[-]` button)
- Change the VisualWorks Projects root directory (drop-down icon at top-right)

The default VisualWorks Projects root directory is:

- on Windows, a subdirectory of the standard My Documents folder, e.g.,
  
  `C:\Documents and Settings\<username>\My_Documents\VisualWorks Projects`

- On Mac OSX and Linux/Unix platforms this is a subdirectory of the standard $HOME location, e.g.,
  
  `/Users/<username>/VisualWorks Projects`
The VisualWorks Projects root directory is persisted in the environment variable, VWPROJECTS. This is managed automatically by the LaunchPad application on Windows (through the Windows registry) and on Mac OS X (in the VM's .plist file). On Linux and Unix platforms, you manage this environment variable in your shell scripts the same way you currently manage setting the $VISUALWORKS environment variable.

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:

```>`
c d c:\vw7.8nc\image\ > ..\bin\win\visual.exe visual.im
```

and on a UNIX or Linux system:

```
$ cd /usr/local/vw7.8nc/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 vwnint.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, and then, the VisualWorks Launcher and a Workspace are displayed.

![Screenshot of VisualWorks splash screen with VisualWorks splash screen and Workspace window.](image)

**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):

![Parcel Manager](image)

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.

**Set VisualWorks Home Directory**

In order to correctly find additional files, the VisualWorks Home directory must be properly set. For client installations, this is typically configured correctly during installation (Windows and Mac OS), or is set in the startup script (Unix/Linux).

For network installations, in which VisualWorks is run from a shared server installation, the home directory must be set in the client.
To set the home directory for the current session, select File > Set VisualWorks Home in the Launcher window. The Settings Tool opens on the home directory page:

Set the VisualWorks Home Directory to the root VisualWorks installation directory, typically c:\vw7.8nc on Windows systems or /usr/local/ vw7.8nc 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).

Uninstalling Products

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

1  Windows: From the Start menu, select Programs > VisualWorks 7.8nc > Install/ > Uninstall.

   UNIX: Execute the script ~vw7.8nc:/Install_Uninstall.

   MacOS: Double-click ~vw7.8nc: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.
The procedures described in this section install ObjectStudio 8.3 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 8.3 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. Visit the Cincom Smalltalk Wiki:

http://www.cincomsmalltalk.com

for information and additional links.