



SOMobjects Developer Toolkit Installation and Configuration Guide

**Including installation from CD-ROM or
diskettes, the SOMobjects Workstation
Enabler, SOMobjects Online Publications,
and documentation PostScript files
on AIX, OS/2, or Windows**

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SOMobjects Developer Toolkit Installation/Configuration Guide

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What's on Your SOMobjects CD-ROM

Your SOMobjects Developer Toolkit CD-ROM contains the components listed below, each in versions compatible with supported AIX, OS/2, and Windows operating systems. Accordingly, this installation/configuration guide includes instructions for installing or using each component. For complete installation/configuration instructions, please refer to the section of this guide that corresponds to your operating system.

- **SOMobjects Developer Toolkit** (installation utility and system files)
- **SOMobjects Workstation Enabler** (installation utility and system files)
- **SOMobjects Publications** (Installation utility and documentation files) and **FrameViewer** (Runtime for online display of publications files)
- PostScript files for the SOMobjects user guide and reference manuals (formatted specifically for printing in an 8.5" x 11" page size)
- Diskette images for SOMobjects Developer Toolkit (installation utility and system files)
- Diskette images for SOMobjects Workstation Enabler (installation utility and system files)
- Utilities for creating diskettes from images on the CD-ROM

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What's New in SOMobjects Version 2.1

Note: You can select this topic from the first screen of the SOMobjects online documentation. It contains hyperlinks that let you jump directly to the documentation for each new feature, to learn about it in more detail.

Version 2.1 of the SOMobjects Developer Toolkit provides enhanced capabilities and improved performance for both SOM and DSOM. In addition, the Toolkit now includes support for DirectToSOM (DTS) C++ compilers. New metaclasses in the Metaclass Framework allow class implementors to define classes that automatically possess certain convenience facilities. Also, TCP/IP support is available for Windows users, and OS/2 users can choose 32-bit TCP/IP.

In particular, SOMobjects Version 2.1 offers the following additions over Version 2.0:

General enhancements

- C++ programmers can use DirectToSOM (DTS) C++ compilers (available from independent software vendors) as an alternative to the SOMobjects Toolkit's C++ bindings. (A DTS C++ compiler uses SOM classes to implement C++ objects.) The support provided by SOMobjects for DTS C++ consists of various enhancements to the SOM API (useful to SOM programmers in general), and a new emitter that produces DTS C++ header files corresponding to SOM IDL. DTS C++ programs `#include` these ".hh" header files, which are emitted as described under "Generating binding files" in Chapter 4, "SOM IDL and the SOM Compiler."
- With this release, TCP/IP support is now available for SOMobjects For Windows. Also, for OS/2 users only, SOMobjects now supports the 32-bit TCP/IP version 2.0, which offers greater performance over the 16-bit TCP/IP version 1.2.1. These are described in your *SOMobjects Installation/Configuration Guide*.

SOMobjects enhancements

- A new default process whereby SOMobjects initializes and destroys objects more efficiently (using the **somDefaultInit** and **somDestruct** methods). See "Initializing and Uninitializing Objects" in Chapter 5, "Implementing Classes in SOM."
- New support for C++-style copy constructors and assignment operators. As with C++, SOM provides reasonable defaults for these, but a class implementor may want to provide specialized implementations. See the **somDefaultConstCopyInit** and **somDefaultConstAssign** methods in the *SOMobjects Developer Toolkit Programmers Reference Manual*.



- A new kind of method, **nonstatic**, that is similar to a C++ nonstatic member function. It is normally invoked using offset resolution but can use any form of SOMObjects method resolution. See “The four kinds of SOM methods” in Chapter 5, “Implementing Classes in SOM” and the **nonstatic** modifier under “Modifier statements” in Chapter 4, “SOM IDL and the SOM Compiler.”
- A new kind of data, **staticdata**, that is similar to C++ static data members. A **staticdata** variable is not stored in an object; rather, the ClassData structure of the implementing class contains a pointer to the variable. See the **staticdata** modifier under “Modifier statements” in Chapter 4, “SOM IDL and the SOM Compiler.”
- Two new modifiers, **somallocate** and **somdeallocate**, used to indicate that a user-written procedure should be executed to allocate/deallocate memory for class instances when the **somAllocate** or **somDeallocate** method is invoked. See these modifiers under “Modifier statements” in Chapter 4, “SOM IDL and the SOM Compiler.”
- The ability to “cast” objects. See the methods **somCastObj** and **somResetObj**.
- New support for loading/unloading class libraries. (This was introduced in SOMObjects For Windows and is now applicable on OS/2 as well.) See the **SOM_ClassLibrary** macro in the *SOMObjects Developer Toolkit Programmers Reference Manual*.

DSOM enhancements

- A new command-line tool, **dsom**, for managing DSOM servers (starting, restarting, stopping, querying, and so forth). See “The **dsom** server manager utility” in Chapter 6, “Distributed SOM.” In addition, a corresponding programmatic interface is provided by methods of the new **SOMDServerMgr** class. See that class and its methods in the *SOMObjects Developer Toolkit Programmers Reference Manual*.
- A new command-line tool, **somdchk**, that performs environment validation. See “Verifying the DSOM environment with **somdchk**” in Chapter 6, “Distributed SOM.”
- New SOM IDL modifiers for memory management of parameters: **memory_management = corba**, **caller_owns_parameters**, **caller_owns_result**, **object_owns_parameters**, and **object_owns_result**. The individual modifiers are described under “Modifier statements” in Chapter 4, “SOM IDL and the SOM Compiler.” See “Memory management” in Chapter 6, “Distributed SOM,” for a complete discussion of the subject. This memory-management support also includes the new method **somdReleaseResources** and the functions **somdExceptionFree** and **SOMD_NoORBfree**, described in the *SOMObjects Developer Toolkit Programmers Reference Manual*.



- A graphical user interface to the DSOM 'regimpl' utility on OS/2, called **pregimpl**. See "Registration steps using 'pregimpl' or 'wregimpl'," in Chapter 6, "Distributed SOM."
- Support for the CORBA constant OBJECT_NIL. In addition, the **is_nil** method of **SOMDObject** can now be used for local objects as well as NULL pointers.
- Support for passing self-referential structs and unions (those valid in IDL) in remote method calls.
- Support for local/remote transparency in DSOM's object-destruction methods. See "Destroying remote objects."
- Ability for users to define customized base proxy classes. See "Customizing the default base proxy class."
- Ability for users to specify an upper limit on the number of threads that a server can spawn, via the SOMDNUMTHREADS environment variable. See this variable under "Preparing the environment."
- Improved error handling and performance enhancements.
- More sample programs distributed with the SOMObjects Toolkit.

Metaclass Framework

- **SOMMBeforeAfter** — a metaclass that enables the programming of "before/after" metaclasses, whose instances execute a particular method before and after each method invocation. See Chapter 10, "The Metaclass Framework," for information about the new Metaclass Framework. Individual metaclasses, along with related classes and methods, are documented in the *SOMObjects Developer Toolkit Programmers Reference Manual*.
- **SOMMTraced** — a utility metaclass to do tracing.
- **SOMRReplicable** — a utility metaclass to ease the use of the Replication Framework.

New restrictions and deprecated methods

While implementing the Metaclass Framework, IBM learned that metaclasses must be programmed so that the capabilities they implement will be preserved when various metaclasses are combined (using multiple inheritance) into a SOM-derived metaclass. To assure this result, the Metaclass Framework metaclasses have been programmed using a "Cooperation Framework." However, IBM is not yet ready to include the Cooperation Framework among the officially supported features of SOMObjects.

To prevent user-defined metaclasses from interfering with the operation of the Cooperation Framework and consequently with the Metaclass Framework, SOMObjects programmers are strongly urged to observe the following restriction when programming new metaclasses:



- User-defined metaclasses can introduce new class methods and class variables, but should *not* override any of the methods introduced by the **SOMClass** class.

SOMObjects users whose metaclass programming requirements cannot be met within the above restrictions will be given access to the Cooperation Framework and its documentation. Note, however, that metaclasses developed using the Cooperation Framework may require reprogramming when an officially supported Cooperation Framework is later introduced.

In addition, use of a number of (public) methods introduced by **SOMClass** is now deprecated because they are useful only from overridden **SOMClass** methods. These methods are listed under the heading “Deprecated methods” in the documentation for **SOMClass** within the *SOMObjects Developer Toolkit Programmers Reference Manual*, until such time as SOMObjects is ready to officially provide a framework within which their use will not interfere with the internal operation of SOMObjects itself.



1. AIX Installation/Configuration Instructions

For users on an IBM RISC System/6000, this section gives instructions for installing SOMobjects Developer Toolkit for AIX and SOMobjects Workstation Enabler for AIX, as well as the SOMobjects Publications and FrameViewer.

How SOMobjects is packaged: Your installation options

Each SOMobjects product consists of various separately installable components, some of which may be optional. The following topics describe the components of each product.

SOMobjects Developer Toolkit components

The SOMobjects Developer Toolkit is composed of the following separately installable components. (The number in parentheses after the component name is the amount of disk space required to install it. Also, the name for each component file set, by AIX version, is in parentheses after the description.)

To install the complete Toolkit, you will need approximately 15 megabytes of available disk space, including the samples source code and the C/C++ bindings generated by somcorba and somxh. To compile all of the samples requires approximately an additional 17.7 megabytes, depending upon your particular compiler.

Note: See the README file in the SOMobjects base directory for any post-installation instructions.

- **SOM Compiler and Emitter Framework (~6140K)**
SOM Compiler creates C and C++ usage and implementation bindings from IDL interface descriptions. The Emitter Framework generates back-end programs for customized processing of IDL.
(som.somc for AIX Version 3.2.5; somtk.comp for AIX Version 4.1.1)
- **SOM Kernel (~590K)**
The SOM Kernel implements the SOM API.
(som.somk for AIX Version 3.2.5; somtk.rte for AIX Version 4.1.1)
- **Interface Repository Framework (~770K)**
The Interface Repository is a database that is generated by the SOM Compiler from IDL. The Interface Repository Framework is used to acquire object interface information dynamically.
(som.somi for AIX Version 3.2.5; somtk.ir for AIX Version 4.1.1)



- **Utility Classes (~880K)**
The Utility Classes provide metaclasses and classes for event management (Event Management Framework) and communications. Communications support includes a library that uses the TCP/IP sockets interface provided by TCP/IP on the AIX base operating system. TCP/IP support is required by the Replication and Event Management Frameworks.
(som.somu for AIX Version 3.2.5; somtk.util for Version 4.1.1)
- **Distributed SOM — DSOM (~870K)**
Distributed SOM (DSOM) enables applications to access objects across address spaces. That is, applications can access objects in other processes of a workstation. (The SOMobjects Workgroup Enabler provides access to objects on different machines.)
(som.somd for AIX Version 3.2.5; somtk.dsom for AIX Version 4.1.1)
- **Persistence Framework (~480K)**
Persistence Framework supports the creation of classes whose instances are persistent, that is, objects that outlive the processes that create them.
(som.somp for AIX Version 3.2.5; somtk.somp for Version 4.1.1)
- **Replication Framework (~410K)**
Replication Framework supports the creation of classes whose instances can be replicated about a network.
(som.somr for AIX Version 3.2.5; somtk.somr for AIX Version 4.1.1)
- **Collection Classes (~550K)**
Collection Classes includes classes for polymorphic containers such as dictionary, set, list, etc.
(som.somuc for AIX Version 3.2.5; somtk.somuc for AIX Version 4.1.1)
- **Samples (~1940K)**
Sample C and C++ code.
(som.somx for AIX Version 3.2.5; somtk.somx for AIX Version 4.1.1)

Any of these options can be separately installed, provided that the following prerequisites are satisfied:

- The SOM Kernel is required by all other components.
- The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- The Utility Classes require the Interface Repository Framework component.
- The Replication Framework requires TCP/IP support.



SOMobjects Workstation Enabler components

Components of the SOMobjects Workstation Enabler are a subset of the components listed above for the SOMobjects Toolkit. (See the preceding list for component descriptions, if needed. Observe that hard-disk requirements are less for the SOMobjects Workstation Enabler, totaling about 4 megabytes.)

- **SOM Kernel** (~320K)
- **Interface Repository Framework** (~710K)
- **Utility Classes** (~770K)
- **Distributed SOM — DSOM** (~750K)
- **Persistence Framework** (~290K)
- **Replication Framework** (~370K)
- **Collection Classes** (~440K)

Any of these components can be separately installed, provided the following requirements are satisfied:

- The SOM Kernel is required by all other components.
- The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- The Utility Classes require the Interface Repository Framework.
- The Replication Framework requires TCP/IP support.

SOMobjects Publications and FrameViewer components

These components provide online documentation for the SOMobjects Developer Toolkit:

- **SOMobjects Publications** (~10.8M)
This set of files contains the same information as the hardcopy SOMobjects manuals. The content has been formatted for online viewing and includes hyperlinks that enable you to jump to related topics. (somview.pubs)
- **FrameViewer** (~21.3M)
The FrameViewer is used for displaying the SOMobjects Publications. (somview.viewer)

The SOMobjects Publications component requires the FrameViewer. Installing FrameViewer also requires an additional 21M for temporary storage.

Note: You might want to install only FrameViewer on your hard disk and view publications files from your CD-ROM under the SOMPUBS directory.



Determining what to install

If you are planning to develop programs that use SOMobjects, you will only need to install components of the SOMobjects Developer Toolkit. Installing the SOMobjects Workstation Enabler over a Toolkit installation is not necessary for developers, because the Toolkit contains all the SOM run-times of the Workstation Enabler.

Installing the SOMobjects Workstation Enabler is necessary (a) if you do *not* plan to build applications that use SOMobjects, but (b) you plan to run an application that uses SOMobjects run-time components and you do *not* have either an AIX 4.1.1 or OS/2 Warp operating system, both of which contain the SOMobjects Workstation Enabler.

A developer might want to install the Workstation Enabler after an application has been created, in order to test the Enabler run times with the application, independently of the SOMobjects Toolkit.

The SOMobjects Publications and FrameViewer should be installed at each site in order to have convenient online documentation.

Hardware requirements for SOMobjects

The total amount of disk space required to store the files installed by each product (with all options selected) is shown below.

- **SOMobjects Developer Toolkit** (~15M, including samples source code and C/C++ bindings)
- **SOMobjects Workstation Enabler** (~4M)
- **SOMobjects Publications** (~11M) and **FrameViewer** (~21.3M plus temporary 21M to install)

The recommended minimum total memory that a workstation needs for acceptable performance from the SOMobjects Developer Toolkit is about 17 megabytes. (Part of this memory is assumed to be in use by AIXWindows, a clock display, and other applications that typically run continuously. Actual performance will be affected by the number of applications running and their memory requirements.)

The recommended minimum total memory for acceptable performance from applications using the SOMobjects Workstation Enabler is about 18 megabytes.

Software requirements for SOMobjects

This document describes how to install the IBM SOMobjects Developer Toolkit on an IBM RISC System/6000 workstation. This product requires that the IBM AIX Base Operating System, Version 3.2.5 or Version 4.1.1, be already installed on the workstation.



In addition, the Replication Framework and the Event Management Framework (included in the som.somu or somtk.util option) require networking software for their operation. On AIX, SOMobjects works with the following networking product:

- Transmission Control Protocol/Internet Protocol software (TCP/IP), Version 3, Release 2 or higher. TCP/IP is not provided in the SOMobjects Developer Toolkit; it is provided by AIX's Base Operating System Network Facilities (BOSNET).

Note: Although the Replication and Event Management Frameworks require networking software, neither requires a network adapter card. Also, the som.somu or somtk.util component file set can be installed without having any networking software installed, so that other components of the file set can be used.

SOMobjects Developer Toolkit, Release 2.1, is compatible with the following IBM compilers on supported AIX systems:

AIX 3.2.5: IBM XL C, Version 1.3; IBM XL C++, Version 1.1.2;

IBM C Set++, Version 2.1.1 or 2.1.2;

AIX 4.1.1: IBM C, Version 3.1; IBM C Set++, Version 3.1.

Using references to AIX system documentation

This installation guide gives references to AIX manuals that you can consult for additional information. When titles differ only in their version number, the title is shown with the version as "3.2/4.1". The use of InfoExplorer online documentation is strongly recommended. For information on any errors generated during installation, see *AIX Version 3.2/4.1 Messages Guide and Reference*.

A note to SOMobjects application developers

If you will be creating applications that package and ship the SOMobjects Workstation Enabler run time, it is essential that you pay particular attention to how and where you install the SOMobjects run-time components for your applications. Before packaging your application, be sure to read Section 5, "Installation Support for SOMobjects Applications," later in this guide.

Obtaining service and technical support

For complete information on obtaining SOMobjects support on AIX, see the main topic "Service and Technical Support for SOMobjects" later in this installation/configuration guide.



Installing SOMobjects Products Using SMIT/installp

This section applies to the SOMobjects Developer Toolkit, SOMobjects Workstation Enabler, and SOMobjects Publications and FrameViewer.

The SOMobjects products are installed using the **installp** AIX installation software, optionally using the System Management Interface Tool (SMIT). SMIT provides a menu-driven environment for the installation process. For more information on SMIT, see the *AIX Version 3.2/4.1 System Management Guide: Operating System and Devices*, in the chapter “System Management Interface Tool.” For more information on **installp**, see the *AIX Version 3.2/4.1 Installation Guide*, in the chapter for installing optional software.

To install SOMobjects, perform the following steps:

1. Login as root.
2. If the AIX Base Operating System (Version 3.2.5 or 4.1.1) is not already installed on the RISC System/6000, install it. (For more information, see the *AIX Version 3.2/4.1 Installation Guide*, in the chapters on BOS Installation.)
3. If you will be installing the Replication Framework and TCP/IP is not already installed on the workstation, install it. For information on installing TCP/IP, see the TCP/IP chapter of *AIX Version 3.2/4.1 System Management Guide: Communications and Networks*.
4. If you have *not* installed any SOMobjects product previously from an install image (using **installp** or SMIT), ensure that the `/usr/lpp/som` directory does *not* exist.

If it does exist (if, for instance, you previously created a `/usr/lpp/som` directory to house beta test code), then remove the `/usr/lpp/som` directory and all its subdirectories and files (with `rm -rf /usr/lpp/som`), after first moving any personal files you wish to save into another directory.

Important: SOMobjects code previously installed by **installp** or SMIT should *not* be removed manually. If desired, it can be removed using **installp** or SMIT. See “Rejecting SOMobjects” later in this section.

5. Insert the SOMobjects Toolkit CD into your CD-ROM drive.
6. Mount the CD-ROM. (If you need directions for this, see the appendix “Mounting a CD-ROM drive” at the end of this installation guide. For purposes of this document, it is assumed that the CD-ROM is mounted over `/cdrom`.)



7. This step is different, depending upon whether you are installing to a standard workstation or diskless-client server. Accordingly, see “A” or “B” below.

A. To install onto a standard workstation using SMIT, enter the following command on an AIX command line:

```
smit -C (if running AIXwindows)
```

or

```
smit (if not running AIXwindows)
```

This command invokes the System Management Interface Tool (SMIT), which provides a menu-driven interface to the **installp** install software. Please review the following section on **installp**, for information on completing the menu items presented by SMIT.

To install SOMobjects using **installp** directly (not using SMIT), enter the command:

```
installp -qad /cdrom/aix.xx/somxx.obj all
```

or

```
installp -qad /cdrom/aix.xx/somxx.obj <component list>
```

where *aix.xx* is:

aix.41 directory containing SOM image for AIX version 4.1.1

aix.32 directory containing SOM image for AIX version 3.2.5

and where *somxx.obj* is:

somtk.obj SOMobjects Toolkit image for AIX version 4.1.1

som.obj SOMobjects Toolkit image for AIX version 3.2.5

somws.obj SOMobjects Workstation Enabler image

somview.obj SOMobjects Publications and FrameViewer image

and where *component list* is the names of selected component file sets that you wish to install. See the earlier topic “How SOMobjects is packaged: Your installation options” for the file-set name of each SOMobjects component.

For example:

```
installp -qad /cdrom/aix.41/somtk.obj all
installp -qad /cdrom/aix.32/somtk.obj som.somk som.somu
```

After invoking **installp**, go to **step 8**.

B. To install into a Shared Product Object Tree [SPOT] on a diskless-client server when the SPOT is not the server's */usr* file system, enter the command

```
smit -C diskless (or smit diskless if not running
AIXWindows)
```



8. If using SMIT, follow the directions and answer the prompts in the SMIT install menus, selecting the product options (described above) that you wish to install (the instructions below correspond to AIX 3.2.5; SMIT menu details may vary for newer versions of AIX):

- a. From the first menu ("System Management"), select:
 - "Software Installation & Maintenance."
- b. From the second menu ("Software Installation & Maintenance"), select:
 - "Install/Update Software."
- c. From the next menu ("Install/Update Software"), select:
 - "Install/Update Selectable Software."
- d. From the next menu ("Install/Update Selectable Software"), select:
 - "Install Software Products at Latest Available Level."

AIX 4.1.1 users need to additionally select:

- "Install New Software Products at Latest Level"

If you are installing onto a SPOT of a diskless-client server when the SPOT is not the server's `/usr` file system (that is, if you invoked SMIT using the `smit [-C] diskless` command), you must now:

- press *F4* to generate a list of SPOTs,
- move the cursor to the desired SPOT, and
- press *Enter*.

- e. At the next prompt ("INPUT device / directory for software"),
 - (1) if you are installing from a CD-ROM drive, enter:
 - `/cdrom/aix.32` (use this directory for AIX Version 3.2.5) or
 - `/cdrom/aix.41` (use this directory for AIX Version 4.1.1), and
 - press *Enter*.

or

- (2) if you are installing SOMobjects from diskettes:
 - press *F4* to generate a list of installation-device file names,
 - move the cursor to highlight the diskette drive into which you inserted the first diskette, and
 - press *Enter*.

- f. Next, select the product options you want to install from the SOMobjects Developer Toolkit CD-ROM. (Note: You do not need to install both the Developer Toolkit and the Workstation Enabler. See "Determining what to install" earlier in this guide.)

To manually select some of the options:

- move the cursor to the field for "SOFTWARE to install" and
- press *F4* to see the list of the available options. (These options are described above under "How SOMobjects is packaged: Your installation options.")



Use the PageUp/PageDown keys or the arrow keys to find the options you want to select. When an option you want to select is highlighted, press *F7* to select it. The ">" symbol will appear beside each item that you have selected. (To deselect an item, move the cursor to highlight that item and press *F7*.)

After selecting all the options you want to install,
— press *Enter*.

- g. The system automatically enters default values for the remaining entry fields in the "Install Software Products at Latest Available Level" menu.

To change any of the default settings:

- move the cursor to the field and
- use the *Tab* key to toggle "Yes" or "No."

Note: It is suggested that you change the default for "Automatically install PREREQUISITE software" from "No" to "Yes." (For a detailed explanation of the entry fields and their default values, see the *AIX Version 3.2/4.1 Installation Guide*, the chapter on installing optional software and service updates, in the section entitled "Install Optional Software and Service Updates.")

When you are satisfied with all the settings shown on the menu,
— press *Enter*.

- h. From the next menu (ARE YOU SURE?),
 - press *Enter* to begin installing the selected options, or
 - press *F3* to return to step (f) above.
9. If you are installing from diskettes, the system will prompt you to insert the next diskette when it is needed, with a message such as "Mount volume 2 on /dev/fd0. Press the Enter key to continue." After all files have been restored, but before the files are checked for validity by **installp**, there will be a few minutes' delay while the restored files are uncompressed. (Total installation time will be roughly ten to fifteen minutes when installing all options.) When installation is complete, the "Command:" status indicator in the upper left-hand corner of the SMIT screen will change from "running" to either "OK" or "failed."
10. The SMIT screen will be positioned to the top of the list of messages generated during installation. Use the Home, End, PageUp, PageDown, and arrow keys to move through the message list.

If the messages indicate a problem with installing a particular option, you only need to reinstall the option that failed or is missing from the "Installp Summary" report. Options that were successfully installed need not be reinstalled.



To perform installation again,
— press *F12* to exit SMIT and
— return to step (7) above.

If the installation was interrupted for any reason (such as by a power failure), you may need to use the **installp** cleanup procedure (available from the SMIT “Clean Up After a Failed Installation” menu) before continuing. (See the *AIX Version 3.2/4.1 Installation Guide*. For 3.2, see the chapter “Optional Software and Service Updates Installation,” in the topic “Cleaning up after a Failed Optional Installation.” For 4.1, see the chapter “Troubleshooting,” in the topic “Cleaning Up Optional Software and Service Updates.”)

Following a successful installation, the selected options will be installed in the */usr/lpp/som* directory. The following subdirectories will be created:

- *bin* — contains executable programs
- *lib* — contains library files
- *include* — contains header files
Note: Most header files for the *include* directory must be generated using the command files *somcorba*, *somstars*, or *somxh*. For more information, see the README file in */usr/lpp/som* after installation is complete.
- *msg* — contains message catalogs
- *etc* — contains miscellaneous files, including the default Interface Repository file (*som.ir*)
- *samples* — contains sample programs

11. When installation is complete:

— press *F12* to exit SMIT.

12. If you are installing SOMobjects from diskettes

— remove the diskette from the drive.

13. Before using the SOMobjects Developer Toolkit, read the README file in */usr/lpp/som* and follow the instructions therein.

Note: If you have installed SOM Publications and FrameViewer, after installation and before using the FrameViewer, you must run the FMUSERSETUP program, as follows:

- Change to directory: */usr/lpp/somview*
- Issue the command: *fmusersetup*

After the program executes, you must logout and log back in before using the FrameViewer. **Note:** The FMUSERSETUP program must be run as “root”, which will be in effect immediately after installation is complete. An AIX administrator has the responsibility to set up FrameViewer for users; otherwise, by default *each user* must also run FMUSERSETUP once (under their own user ID) to set up their own environment variables.



14. To start FrameViewer, enter:

```
viewer [-f intro1.doc]
```

where “-f intro1.doc” is optional. This option specifies that file “intro1.doc” should be displayed when FrameViewer opens. If you do not include “-f intro1.doc” in your “viewer” command, after FrameViewer initializes, click on “Open” and select file “intro1.doc”.

Note: You must have X11 Release 5 installed in order to run FrameViewer.

If the preceding command is not recognized on your AIX system, enter:

```
viewer -f /usr/lpp/somview/intro1.doc
```

Opening file “intro1.doc” brings up the main window “SOMobjects Developer Toolkit Online Documentation.” File “intro1.doc” is the top level of the tree structure comprising the SOMobjects Publications. The first item on the menu is “How to use SOMobjects Online Documentation,” which will give you some useful information about using the FrameViewer itself, as well as information about the organization of the documentation and how the hyperlinks are designed.

Subdirectories created below the “somview” directory contain the SOMobjects Publications files to which file “intro1.doc” is linked. The following directories are created (in addition to some subdirectories for FrameViewer):

- cc — SOMobjects Publications Collection Classes files
- emit — SOMobjects Publications Emitter Framework files
- ref — SOMobjects Publications Reference Manual files
- user — SOMobjects Publications User Guide files
- qref — SOMobjects Publications Quick Reference files

15. Please also refer to file “fvreadme” in the FrameViewer base directory (*/usr/lpp/somview*) for more information on FrameViewer.

Setting the window size of FrameViewer

You can resize the FrameViewer window that displays the SOMobjects Publications by pressing the % button in the bottom of the frame and choosing “Set.” After defining another %, choose “Set” again to select your new size. Then select “Fit window to page size.” Two things are important, however:

- Do *not* choose a screen % where bold text turns “normal,” because most hyperlinks are attached to bold terms. The “intro1.doc” file ships at 140%, and all subsequent files that you open by using hyperlinks will display in the same size. Other percentages that provide good resolution on most monitors are 120%, 125%, 129%, and 150%.
- Do *not* adjust the frame (with the cursor) so that it obscures the push buttons for PgDn, PgUp, GoBack, Top, and Close. The buttons do not work if you must scroll the page in order to display them.



Installing SOMobjects Products Using 'sominst'

The **sominst** utility is a script for quickly installing SOMobjects products, creating installation diskettes, or backing up the PostScript files. The **sominst** utility does not require all the complicated steps of the SMIT command. However, you can install a SOMobjects product using **sominst** only under certain conditions:

- You want to perform a *full installation* of a product (all components of the SOMobjects Developer Toolkit, SOMobjects Workstation Enabler, or SOMobjects Publications and FrameViewer).
- No component(s) of SOMobjects 2.1 are installed on your system.

The **sominst** utility *does work* when components of SOMobjects 2.0 are installed on your system. For any other operations, it is strongly recommended that you consult your AIX manual for using the SMIT command.

Notes: (1) Before starting, make sure that you have enough disk space to install. (2) The **sominst** command executes by invoking **installp** with appropriate parameters.

To install a SOMobjects product using **sominst**, perform the following steps:

1. Login as root.
2. Insert the SOMobjects Toolkit CD-ROM into your CD-ROM drive.
3. Mount the CD-ROM drive. (If you need directions for this, see the appendix "Mounting a CD-ROM drive" at the end of this installation guide. For purposes of this document, it is assumed that the CD-ROM is mounted over /cdrom.)
4. Change directory to your cdrom directory (for example: `cd /cdrom`).
5. Enter the following command on an AIX command line: **sominst**
6. A brief introductory screen will display, as shown below:

This installation script allows you to perform a *full installation* of the following SOMobjects products:

- SOMobjects Developer Toolkit
- SOMobjects Workstation Enabler
- SOMobjects Publications and FrameViewer

In addition to installing the products listed above, this script allows you to create diskettes that can be used to install the products, or to create backup diskettes of the PostScript files containing the SOMobjects user manuals (formatted for hardcopy output).



If you want to do a partial installation of any of the above products, please quit and follow the Installation Guide's instructions in the topic "Installing SOMobjects Products Using SMIT/installp."

Note: You need to login as "root" to install SOMobjects products.

Would you like to continue? [y or n] —>

7. Enter "y" to continue.
8. The following list of installation options will be displayed:
 - 1) Install SOMobjects Developer Toolkit
 - 2) Create SOMobjects Developer Toolkit installation diskettes
 - 3) Install SOMobjects Workstation Enabler
 - 4) Create SOMobjects Workstation Enabler installation diskettes
 - 5) Install SOMobjects Publications and FrameViewer
 - 6) Create backup diskettes of the PostScript files containing the SOMobjects user manuals (formatted for hardcopy output)
 - 7) Quit

Enter:

 - "1" if you want to install SOMobjects Developer Toolkit,
 - "3" if you want to install SOMobjects Workstation Enabler, or
 - "5" if you want to install SOMobjects Publications and FrameViewer
9. You will then be asked to reconfirm your choice (and given an opportunity to quit or to make a different selection).
 - Enter "y" to confirm your selection.
10. The next question will ask which AIX system you are running:
 - Enter "3" for an AIX Version 3.2.5 installation, or
 - Enter "4" for an AIX Version 4.1.1 installation.

Note: You can quit from **sominst** by typing "q" in response to the user prompt in any of the preceding steps.

11. The system will then begin to install the option you have selected.
12. A list of messages will be generated during installation. (For an explanation of the messages generated by **installp**, see the *AIX Version 3.2/4.1 Installation Guide*, the chapter on installing optional software and service updates, in the section entitled "Error Messages and Output from the Installp Command.")

If the messages indicate a problem with installing a particular option, you only need to reinstall the option that failed or is missing from the "Installp Summary" report. Options that were successfully installed need not be reinstalled.



To perform the installation again,

— Enter an appropriate SMIT command to reinstall the failed option.

(See “Installing SOMobjects Products Using SMIT/installp” earlier in this guide.)

If the installation was interrupted for any reason (such as by a power failure), you may need to use the **installp** cleanup procedure (available from the SMIT “Clean Up After a Failed Installation” menu) before continuing. (See the *AIX Version 3.2/4.1 Installation Guide*. For 3.2, see the Chapter “Optional Software and Service Updates Installation,” in the topic “Cleaning up after a Failed Optional Installation.” For 4.1, see the chapter “Troubleshooting,” in the topic “Cleaning Up Optional Software and Service Updates.”)

Following a successful installation, the selected options will be installed in the `/usr/lpp/som` directory. The following subdirectories will be created:

- `bin` — contains executable programs
- `lib` — contains library files
- `include` — contains header files

Note: Most header files for the `include` directory must be generated using the command files `somcorba`, `somstars`, or `somxh`. For more information, see the README file in `/usr/lpp/som` after installation is complete.

- `msg` — contains message catalogs
- `etc` — contains miscellaneous files, including the default Interface Repository file (`som.ir`)
- `samples` — contains sample programs

13. Before using the SOMobjects product, read the README file in `/usr/lpp/som` and follow the instructions therein.

14. If you have installed SOM Publications and FrameViewer, after installation and before using the FrameViewer, you must run the FMUSERSETUP program, as follows:

- Change to directory: `/usr/lpp/somview`
- Issue the command: `fmusersetup`

After the program executes, you must logout and log back in before using the FrameViewer. Note: The FMUSERSETUP program must be run as “root”, which will be in effect immediately after installation is complete. An AIX administrator has the responsibility to set up FrameViewer for users; otherwise, by default *each user* must also run FMUSERSETUP once (under their own user ID) to set up their own environment variables.



15. To start FrameViewer, enter:

```
viewer [-f intro1.doc]
```

where “-f intro1.doc” is optional. This option specifies that file “intro1.doc” should be displayed when FrameViewer opens. If you do not include “-f intro1.doc” in your “viewer” command, after FrameViewer initializes, click on “Open” and select file “intro1.doc”.

Note: You must have X11 Release 5 installed in order to run FrameViewer.

If the preceding command is not recognized on your AIX system, enter:

```
viewer -f /usr/lpp/somview/intro1.doc
```

Opening file “intro1.doc” brings up the main window “SOMobjects Developer Toolkit Online Documentation.” File “intro1.doc” is the top level of the tree structure comprising the SOMobjects Publications. The first item on the menu is “How to use SOMobjects Online Documentation,” which will give you some useful information about using the FrameViewer itself, as well as information about the organization of the documentation and how the hyperlinks are designed.

Subdirectories created below the “somview” directory contain the SOMobjects Publications files to which file “intro1.doc” is linked. The following directories are created (in addition to some subdirectories for FrameViewer):

- cc — SOMobjects Publications Collection Classes files
- emit — SOMobjects Publications Emitter Framework files
- ref — SOMobjects Publications Reference Manual files
- user — SOMobjects Publications User Guide files
- qref — SOMobjects Publications Quick Reference files

16. Please also refer to file “fvreadme” in the FrameViewer base directory (*/usr/lpp/somview*) for more information on FrameViewer.

Setting the window size of FrameViewer

You can resize the FrameViewer window that displays the SOMobjects Publications by pressing the % button in the bottom of the frame and choosing “Set.” After defining another %, choose “Set” again to select your new size. Then select “Fit window to page size.” Two things are important, however:

- Do *not* choose a screen % where bold text turns “normal,” because most hyperlinks are attached to bold terms. The “intro1.doc” file ships at 140%, and all subsequent files that you open by using hyperlinks will display in the same size. Other percentages that provide good resolution on most monitors are 120%, 125%, 129%, and 150%.
- Do *not* adjust the frame (with the cursor) so that it obscures the push buttons for PgDn, PgUp, GoBack, Top, and Close. The buttons do not work if you must scroll the page in order to display them.



Creating Installation Diskettes for SOMobjects

The **sominst** utility is a script for quickly installing SOMobjects products, creating installation diskettes, or backing up the PostScript files. This topic covers the options for creating installation diskettes or diskettes of the PostScript files.

Notes: (1) In order to use **sominst** to install a SOMobjects product, there are certain restrictions. See “Installing SOMobjects Products Using ‘sominst’.” (2) The **sominst** command executes by invoking **installp** with appropriate parameters.

Perform the following steps to create installation diskettes for the SOMobjects Developer Toolkit or SOMobjects Workstation Enabler, or to create PostScript files for the SOMobjects manuals:

1. Login as root.
2. Insert the SOMobjects Toolkit CD into your CD-ROM drive.
3. Mount the CD-ROM drive over /cdrom. (If you need instructions for this, see the appendix “Mounting a CD-ROM drive” at the end of this installation guide.)
4. Change directory to your cdrom directory (for example: `cd /cdrom`).
5. Enter the following command on an AIX command line: **sominst**
6. A brief introductory screen will display, as shown below:

This installation script allows you to perform a *full installation* of the following SOMobjects products:

- SOMobjects Developer Toolkit
- SOMobjects Workstation Enabler
- SOMobjects Publications and FrameViewer

In addition to installing the products listed above, this script allows you to create diskettes that can be used to install the products, or to create backup diskettes of the PostScript files containing the SOMobjects user manuals (formatted for hardcopy output).

If you want to do a partial installation of any of the above products, please quit and follow the Installation Guide’s instructions in the topic “Installing SOMobjects Products Using SMIT/installp.”

Note: You need to login as “root” to install SOMobjects products.

Would you like to continue? [y or n] —>

7. Enter “y” to continue.



8. The following list of installation options will be displayed:

- 1) Install SOMobjects Developer Toolkit
- 2) Create SOMobjects Developer Toolkit installation diskettes
- 3) Install SOMobjects Workstation Enabler
- 4) Create SOMobjects Workstation Enabler installation diskettes
- 5) Install SOMobjects Publications and FrameViewer
- 6) Create backup diskettes of the PostScript files containing the SOMobjects user manuals (formatted for hardcopy output)
- 7) Quit

Enter:

- “2” if you want to create SOMobjects Developer Toolkit installation diskettes,
- “4” if you want to create SOMobjects Workstation Enabler installation diskettes, or
- “6” if you want to create backup diskettes of the PostScript files containing the SOMobjects user manuals (formatted for hardcopy output)

Note: To create diskettes of the PostScript files, you will need 11 diskettes.

9. You will then be asked to reconfirm your choice (and given an opportunity to quit or to make a different selection).

- Enter “y” to confirm your selection.

10. After choice “2” or “4”, you will be asked to specify the AIX system for which you want to create installation diskettes:

- Enter “3” to create installation diskettes for AIX Version 3.2.5, or
- Enter “4” to create installation diskettes for AIX Version 4.1.1.

11. The system will prompt you for a diskette with a message such as:

“Mount volume 1 on /dev/rfd0
Press Enter to continue.”

To create the diskette:

- Label a new diskette as “Diskette #1”,
- insert it into the diskette drive, and
- press *Enter*.

12. Repeat step 11 for subsequent diskettes until all are done.



Rejecting SOMobjects

After installing SOMobjects, it is possible to later reject it from the system, as long as it has been applied but not committed. (When installing software using SMIT or **installp**, the default is *not* to automatically commit.) Continue at “A” or “B,” depending upon whether you will reject SOMobjects using SMIT or reject from the command line:

A. To reject SOMobjects using SMIT, enter the command:

```
smit -C          (or simply  smit  if not running AIXwindows)
```

From the “System Management” menu, proceed to the “Software Installation and Maintenance” menu.

Next, select “Manage Applied Software” and then select “Remove Applied Software Products.”

- Press F4 to see a list of software products currently on the system, and
- select the “som” options to be rejected.
- Press Return when all selections are made.

This returns you to the “Remove Applied Software Products” menu. Use the down arrow key to move to the line “Automatically Remove Dependent Software?”

- Press the Tab key to toggle this to “Yes”, and
- press Return to reject the selected options.

B. To reject a SOMobjects product from the command line, use the command:

```
installp -gr somxx
```

where *somxx* is:

somtk	SOMobjects Toolkit for AIX version 4.1.1
som	SOMobjects Toolkit for AIX version 3.2.5
somws	SOMobjects Workstation Enabler
somview	SOMobjects Publications and FrameViewer

To reject only selected options of the product, specify the name of the component file set instead of “som”. For example, to remove the sample programs from the system, use the command:

```
installp -gr som.somx      (for AIX 3.2.5)
installp -gr somtk.somx    (for AIX 4.1.1)
```

If the SOMobjects Toolkit has been applied *and committed*, it is not possible to reject it from the system. It is possible, however, to reinstall the product, as follows.



To reinstall from diskettes, issue the command:

```
installp -aF somxx
```

where *somxx* is:

somtk	SOMobjects Toolkit for AIX version 4.1.1
som	SOMobjects Toolkit for AIX version 3.2.5
somws	SOMobjects Workstation Enabler
somview	SOMobjects Publications and FrameViewer

Or, to reinstall from the CD-ROM, issue the command:

```
installp -aFd /cdrom/aix.xx/yyy.obj zzz
```

where *aix.xx* is:

aix.41	directory containing SOM image for AIX version 4.1.1
aix.32	directory containing SOM image for AIX version 3.2.5

and where *yyy* and *zzz* are:

<i>yyy</i>	<i>zzz</i>	
somtk	somtk	SOMobjects Toolkit image for AIX version 4.1.1
somtk	som	SOMobjects Toolkit image for AIX version 3.2.5
somws	somws	SOMobjects Workstation Enabler image
somview	somview	SOMobjects Publications and FrameViewer image

The newly installed product, if applied but not committed, can then be rejected as described above. For more information, see the *AIX Version 3.2/4.1 Installation Guide*. For 3.2, see the chapter “Optional Software and Service Updates Installation,” in the section “Reject Software.” For 4.1, see the appendix “Optional Software and Update Concepts,” in the topic “Applying, Committing, Rejecting and Removing Software Products and Updates.”

Note re: files remaining after the rejection

Some of the files provided by the SOMobjects Developer Toolkit are also provided by the SOMobjects Workstation Enabler and the SOMobjects Workgroup Enabler products. All three SOMobjects products install files into */usr/lpp/som* subdirectories. To prevent file loss, the installation process for each of these products will *not* replace an existing file in */usr/lpp/som* unless the replacing file is from a newer product than the existing file.

A consequence of this special installation process is that, if the SOMobjects Developer Toolkit is rejected from the system, some of the files installed in */usr/lpp/som* will not be automatically removed. After rejecting the product from the system, any remaining files can be manually removed if desired, after ensuring that they are not used by some other product, although this is not recommended.



Removing SOMobjects

AIX 4.1.1 allows the removal of a product even if it has been committed. This option is *not* supported on AIX 3.2.5.

A. To remove SOMobjects using SMIT, enter the command:

`smit -C` (or simply `smit` if not running AIXwindows)

From the “System Management” menu proceed to the menu “Maintain Installed Software” and then select “Remove Software Products”.

You will be positioned on the first field: “SOFTWARE name.”

- Press F4 to see a list of software products currently on the system, and
- Select the “som/somws/somwg” options to be removed.
- Press Return when all selections are made.

This returns you to the “Remove Software Products” menu. Use the up/down arrow keys to move between fields and the Tab key to toggle the selections for each field.

Make the following selections for the remaining fields:

<i>Field</i>	<i>Selection</i>
PREVIEW only?	no
REMOVE dependent software?	yes
DETAILED output?	yes

- Then, press Enter to perform the removal.

After the operation has completed, browse through the output to verify that the selected products were removed.

- Press F10 to exit.



Network Requirements for AIX

Networking support is required by several frameworks of SOMobjects products for AIX, as follows:

- Distributed SOM (DSOM) Framework requires networking support in
 - SOMobjects Workgroup Enabler only
- Replication Framework requires networking support in
 - SOMobjects Developer Toolkit
 - SOMobjects Workstation Enabler
 - SOMobjects Workgroup Enabler
- Event Management Framework requires networking support in
 - SOMobjects Developer Toolkit
 - SOMobjects Workstation Enabler
 - SOMobjects Workgroup Enabler

If you are using any of the above frameworks that require networking support, then before you can use SOMobjects with your application:

- The supported networking product software must be installed and configured on each machine, according to the instructions accompanying the product(s).
- The network itself must be configured, which includes assigning a *network address* and *hostname* to each machine. (Machines on the network are referred to as *hosts* or *nodes*.)

When using the SOMobjects Workgroup Enabler, these additional considerations apply:

- If you are using the Replication Framework, a network file system must also be installed for its operation.
- If you are using Distributed SOM, the DSOM configuration data files may be stored on a network file system for ease of maintenance, although this is optional.

Networking hardware and software requirements

On AIX (Version 3.2.5 or Version 4.1.1), the following network software product is supported:

- Transmission Control Protocol/Internet Protocol (TCP/IP), Version 3.2 or 4.1, and Network File System (NFS), Version 3.2 or 4.1.

Configuring your network

As part of network configuration, an address or a hostname must be assigned to each machine. This procedure is usually quite different for each network platform.



To facilitate the portability of SOMobjects products and applications to a variety of network platforms, a uniform communications model and network addressing scheme is used. It is based on the well-known *sockets interface*, *Internet addresses*, and *hostnames* used with TCP/IP.

Choosing an IP address and hostname

IP addresses

Each machine in a SOMobjects workgroup LAN must have a unique network address. The SOMobjects frameworks use a TCP/IP-style addressing scheme to identify hosts on the network. This scheme uses 32-bit Internet addresses (also known as “IP addresses”), and a “hosts” file for resolving symbolic hostnames to their network addresses. For uniformity, the SOMobjects frameworks always expect IP addresses to be used. For those protocols that do not normally use IP addresses to identify machines (such as NetWare), the SOMobjects products provide runtime support for translating IP addresses into the “native” addresses of the underlying protocol.

IP addresses are 32-bit integers that uniquely identify a host in a network. For convenience, the 32-bit IP address is usually expressed in four-part *dotted-decimal* form. For example:

```
129.35.64.7
1.1.1.1
200.001.001.255
```

Each of the four numbers represents the value of one 8-bit quantity in the 32-bit address.

If a machine is connected to multiple networks, it may have multiple IP addresses. Usually, each LAN adapter used to connect to a different network will be configured with a unique address.

It is essential that each host’s IP addresses must be unique. (That is, for each IP address assigned to a host, no other host can have that address.)

Hostnames

In a SOMobjects workgroup LAN, each machine is also assigned a unique hostname, and zero or more aliases. Hostnames are simple strings of alphanumeric characters, underscores (_), hyphens (-), and periods (.). For example:

```
server1
my_machine.austin.ibm.com
```

“Hosts” and “resolv” files

The association between hostnames and IP addresses is maintained in a “hosts” file or database. The “hosts” file may be stored on each machine, or if the



network supports it, in a centralized name service. When a SOMobjects application uses a symbolic hostname to refer to a destination machine, the networking software resolves the symbolic name to an IP address by querying the “hosts” file or name service.

Each line of the HOSTS file takes the following format:

```
IPaddress hostname [ alias(es) ] [ # comment ]
```

The following example illustrates a “hosts” file that contains entries for three machines on a network.

```
129.5.24.1 host1 mailroom
129.5.24.3 host3 joe codeserver      # Joe's machine
129.5.24.4 host4.austin.ibm.com
```

In this example, the *hostname* host3 or the *aliases* joe or codeserver would be resolved by the networking software to the IP address of 129.5.24.3.

With TCP/IP, a Domain Name Service may also be used to resolve symbolic names to IP addresses. (Domain Name Service is not provided with SOMobjects NetBIOS Support or NetWare Support.) If a Domain Name Service is used, a local “resolv” file is used to identify the nameservers. For example, a “resolv” file might have the following contents:

```
domain austin.ibm.com
nameserver 129.34.128.245
nameserver 129.34.128.246
```

If a “resolv” file is present, the networking software will use the nameservers to resolve the symbolic hostname to an IP address. Note: Each nameserver will be tried in succession. If a nameserver is down, it may take 60 seconds or more to timeout.



Configuration of TCP/IP Networks

This section explains how to configure a TCP/IP network for use with SOMobjects applications.

Choosing IP addresses and hostnames

For each machine in your workgroup LAN, choose a unique IP address and hostname. The addresses and hostnames will be assigned to each machine during TCP/IP configuration.

Installing and configuring TCP/IP

On AIX, TCP/IP and NFS are included in the AIX Base Operating System Network Facilities (BOSNET) licensed program product, and are installed and configured using SMIT. For information on installing TCP/IP and NFS, see the TCP/IP and Network File System chapters of *AIX Version 3.2/4.1 System Management Guide: Communications and Networks*.

During the configuration procedure, ensure that you perform the following steps:

- Assign a unique IP address to each LAN adapter,
- Assign a unique hostname to the machine, and
- Install and enable NFS if the Replication Framework will be used.

Note: If you are not using the Replication Framework, you may choose to install NFS for use with the other SOMobjects frameworks in the workgroup environment. However, this is optional.

“Hosts” file

As part of the configuration, TCP/IP will insert an entry into the local “hosts” file for the machine. On AIX, the hosts file is named `/etc/hosts`.

TCP/IP on AIX can also use a nameserver to resolve symbolic hostnames to IP addresses. If your network uses a nameserver, ensure the following is done:

- Add your machines’ hostnames and IP addresses to the nameserver’s database, and
- Include the address of the nameserver in your local “resolve” file

On AIX, the local “resolve” file is named `/etc/resolv.conf`.

Other network configuration

After you install and configure TCP/IP and (optionally) NFS, the SOMobjects product can be used without further network configuration.

2. OS/2 Installation/Configuration Instructions

This section gives instructions for installing SOMobjects Developer Toolkit for OS/2 and SOMobjects Workstation Enabler for OS/2, as well as the SOMobjects Publications and FrameViewer.

Software requirements for SOMobjects

The following software is a prerequisite for SOMobjects:

- OS/2 2.1 or 2.11, OS/2 2.1 for Windows, or OS/2 Warp (OS/2 Version 3).

For applications that use the Replication Framework with the Workstation Enabler, SOMobjects requires TCP/IP support.

WIN-OS2 Restrictions: (1) The Replication Framework is not supported in the WIN-OS2 environment (Windows running on OS/2). (2) To run Distributed SOM applications in the WIN-OS2 environment, you must use IBM TCP/IP for DOS/Windows (the only supported networking protocol for WIN-OS2). (3) Interoperability between WIN-OS2 and OS/2 within the same workstation is not supported.

SOMobjects Developer Toolkit, Release 2.1, supports the following OS/2 compilers: Borland C++ for OS/2, Version 1.5; IBM CSet++ for OS/2, Version 2.1; and MetaWare High C++, Version 3.2.

How SOMobjects is packaged: Your installation options

Each SOMobjects product included on your CD-ROM (or on installation diskettes) consists of various separately installable components, some of which may be optional. The following topics describe the components of each product.

SOMobjects Developer Toolkit components

The SOMobjects Developer Toolkit is composed of the following separately installable components. (The number in parentheses after each component name is the amount of disk space required to install it.) To install the complete Toolkit, you will need approximately 14.4 megabytes, including the samples source code and the C/C++ bindings generated by somcorba and somxh. To compile all of the samples requires an additional 9.6 megabytes.

The recommended minimum total memory that a workstation needs for acceptable performance from the SOMobjects Developer Toolkit is about 10 megabytes. (Part of this memory is assumed to be in use by other applications that typically run continuously. Actual performance will be affected by the number of applications running and their memory requirements.)

Note: See the README file in the SOMobjects base directory for any post-installation instructions.



- **SOM Compiler and Emitter Framework (~3100K)**
SOM Compiler creates C and C++ usage and implementation bindings from IDL interface descriptions. The Emitter Framework generates back-end programs for customized processing of IDL.
- **SOM Kernel (~910K)**
The SOM Kernel implements the SOM API.
- **Interface Repository Framework (~740K)**
The Interface Repository is a database that is generated by the SOM Compiler from IDL. The Interface Repository Framework is used to acquire object interface information dynamically.
- **Utility Classes (~675K)**
The Utility Classes provide metaclasses and classes for event management (Event Management Framework) and communications. Communications support includes a library that uses the TCP/IP sockets interface provided by TCP/IP for OS/2. TCP/IP support is required by the Replication and Event Management Frameworks. (TCP/IP is purchased separately.)
- **Distributed SOM — DSOM (~850K)**
Distributed SOM (DSOM) enables applications to access objects across address spaces. That is, applications can access objects in other processes, even on different machines.
- **Persistence Framework (~450K)**
Persistence Framework supports the creation of classes whose instances are persistent, that is, objects that outlive the processes that create them.
- **Replication Framework (~325K)**
Replication Framework supports the creation of classes whose instances can be replicated about a network.
- **Collection Classes (~325K)**
Collection Classes includes classes for polymorphic containers such as dictionary, set, list, etc.
- **Samples (~1900K)**
Sample C and C++ code.

Any of these components can be separately installed, provided the following requirements are satisfied:

- The SOM Kernel component is required by all other components.
- The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- The Utility Classes require the Interface Repository Framework component.
- The Replication Framework requires TCP/IP support.



SOMobjects Workstation Enabler components

Components of the SOMobjects Workstation Enabler are a subset of the components listed above for the SOMobjects Developer Toolkit. (See the preceding list for component descriptions, if needed. Observe that hard-disk requirements are less for the SOMobjects Workstation Enabler, totaling about 4 megabytes.) The recommended minimum total memory that a workstation needs for acceptable performance from applications using the SOMobjects Workstation Enabler is about 12 megabytes.

- **SOM Kernel** (~330K)
- **Interface Repository Framework** (~640K)
- **Utility Classes** (~550K)
- **Distributed SOM — DSOM** (~625K)
- **Persistence Framework** (~200K)
- **Replication Framework** (~280K)
- **Collection Classes** (~200K)

Any of these components can be separately installed, provided the following requirements are satisfied:

- The SOM Kernel component is required by all other components.
- The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- The Utility Classes require the Interface Repository.
- The Replication Framework requires TCP/IP support.

SOMobjects Publications and FrameViewer components

These components provide online documentation for the SOMobjects Developer Toolkit:

- **SOMobjects Publications** (~10800K)
This set of files contains the same information as the hardcopy SOMobjects manuals. The content has been formatted for online viewing and includes hyperlinks that enable you to jump to related topics.
- **FrameViewer** (~5900K)
The FrameViewer is used for displaying the SOMobjects Publications.

The SOMobjects Publications component requires the FrameViewer.

Note: You might want to install only FrameViewer on your hard disk and view publications files from your CD-ROM under the SOMPUBS directory.



Determining what to install

If you are planning to develop programs that use SOMobjects, you will only need to install components of the SOMobjects Developer Toolkit. Installing the SOMobjects Workstation Enabler over a Toolkit installation is not necessary for developers, because the Toolkit contains all the SOM run-times of the Workstation Enabler.

Installing the SOMobjects Workstation Enabler is necessary (a) if you do *not* plan to build applications that use SOMobjects, but (b) you plan to run an application that uses SOMobjects run-time components and you do *not* have either an AIX 4.1.1 or OS/2 Warp operating system, both of which contain the SOMobjects Workstation Enabler.

A developer might want to install the Workstation Enabler after an application has been created, in order to test the Enabler run times with the application, independently of the SOMobjects Toolkit.

The SOMobjects Publications and FrameViewer should be installed at each site in order to have convenient online documentation.

Installing over existing SOMobjects products

When you install a SOMobjects 2.1 product over the same 2.0 product, or when you install one SOMobjects 2.1 product over another 2.1 product, you may encounter some files and DLLs that are in use. This presents some situations that need careful attention and often require changes to your CONFIG.SYS file.

Saving a backup // Deleting and re-installing

If (a) you do *not* select the “backup” option, and/or (b) you do *not* plan to delete and re-install the product, you can continue with the installation and, following a reboot, the files will be updated correctly.

However, if you accept the default setting that makes a “backup” of your previous install, or if you choose to delete and re-install, you must modify your CONFIG.SYS file as described below *prior to installation*:

- Edit your CONFIG.SYS file to remove the SOM paths from LIBPATH and to remove the line that sets the SOMIR environment variable. Then reboot and install.

Installing over another SOMobjects product

If you install a SOMobjects product onto a system that already contains another SOMobjects product, after installation make sure that your LIBPATH and environment variables (PATH, DPATH, SOMIR, SOMBASE) in the CONFIG.SYS file are set to the appropriate directory.



Also, after installation the SOMIR environment variable may contain the names of extraneous Interface Repository files. For example, your CONFIG.SYS file might contain:

```
SET SOMIR=C:\SOMWG\ETC\SOM.IR;C:\SOM\ETC\SOM.IR;SOM.IR
```

To limit the searches made on the Interface Repository, you should modify the SOMIR setting to:

```
SET SOMIR=C:\SOMWG\ETC\SOM.IR;SOM.IR
```

Updating a previous installation

If you elect to “Update the currently installed components” when installing a SOMobjects 2.1 product, you must check the value specified in CONFIG.SYS for the SOMIR environment variable. This can be done either before installation (preferably) or afterward, as follows:

- If you check the SOMIR value before installing Version 2.1, be sure that the SOMIR keyword and all path and file names are in *upper case*. You can then install SOMobjects as usual.
- If you check the SOMIR value after installation, be sure that there are *no duplicates* of path/file names in the SOMIR list.

Note1: These checks are required because of the way that certain other programs save information into CONFIG.SYS. If your CONFIG.SYS happens to contain multiple SOMIR statements, only the last one will be used.

Note2: OS/2 Warp users should not have this problem unless you have modified the SOMIR environment variable specification.

A note to SOMobjects application developers

If you will be creating applications that package and ship the SOMobjects Workstation Enabler run time, it is essential that you pay particular attention to how and where you install the SOMobjects run-time components for your applications. Before packaging your application, be sure to read Section 5, “Installation Support for SOMobjects Applications,” later in this guide.

Obtaining service and technical support

For complete information on obtaining SOMobjects support on OS/2, see the main topic “Service and Technical Support for SOMobjects” later in this installation/configuration guide.



Installing SOMobjects from the CD-ROM

This section describes how to use a CD-ROM to install the IBM SOMobjects Developer Toolkit on a personal computer running OS/2. There are three product options that you can install:

- SOMobjects Developer Toolkit
- SOMobjects Workstation Enabler
- SOMobjects Publications and FrameViewer

Each of the foregoing product options is composed of multiple components, some of which are optional. See the earlier topic “How SOMobjects is packaged: Your installation options” to determine which components you will need.

Installing the SOMobjects Toolkit from CD-ROM

To install the SOMobjects Developer Toolkit from CD-ROM, perform the following steps:

1. Ensure that OS/2 2.1 or higher is installed on your machine.
2. Make sure to configure your CD-ROM drive.
3. If you will be using the Replication Framework, then install the appropriate network software. See the later main topic “Network Requirements for OS/2.”
4. Insert the CD-ROM into the CD-ROM drive.
5. From an OS/2 command line, make the CD-ROM the default by entering:

h:

then, enter the command:

h: **install**

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard PM interface. The title of this dialog box is “SOMobjects Install Selections.”

6. There are six options you can select from the dialog box:
 - Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside “Install SOMobjects Developer Toolkit” (or use the up/down arrow keys to toggle to that selection).



7. When you have made your selection, click on the *OK* button.
8. An installation utility with a “SOMobjects” logo appears, having a standard PM interface. In the main installation window, you will see a text window entitled “SOMobjects Developer Toolkit Installation Instructions” that contains information to help you continue with installation.
9. If you do **not** have a previous version of SOMobjects Developer Toolkit installed, **go to step 15** below.

If you have previously installed **some** SOMobjects components but now need to install other components, **go to step 13** below.

If you are installing SOMobjects 2.1 over an **earlier version**, continue with step 10.

10. After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialogue box to appear with the following choices:
 - ☒ Update the currently installed components
 - ☐ Delete the currently installed components and re-install

The default is to update the currently installed components. Click on the check box of your choice, and then click on the *Continue* button.

11. The install program will ask you to make selections from the “Update” dialog box. The following selection options will be presented:
 - ☒ Update CONFIG.SYS
 - ☒ Save a backup version?

The default is to update CONFIG.SYS *and* to Save a backup version.

Important: You may *not* want to Save a backup, because continuing this installation process will not be successful. Read “**Installing over existing SOMobjects products**” on page 28, and follow those instructions to have a successful installation.

After making your selections, click on the *Update* button. This will begin the installation of selected components.

12. Go to **step 18** below.
13. If you have previously installed **some**, but not all, of the components available for SOMobjects Developer Toolkit, continue at this step:

After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialog box to appear with the following choices:

- ☐ Update the currently installed components
- ☐ Delete the currently installed components and re-install
- ☒ Install additional components

Select “Install additional components” and click on the *Continue* button.



Note: Before you select “Delete the currently installed components and re-install,” read “**Installing over existing SOMobjects products**” on page 28. The delete will fail unless you follow those directions.

14. The “Install” dialog box appears with the following options:

- ☒ Update CONFIG.SYS
- ☐ Overwrite files

The default is to update CONFIG.SYS and *not* to overwrite existing files.

After making your choice, click on *OK*.

The “Install — directories” dialog box is presented, specifying the SOMobjects base directory and a list of uninstalled components that can be additionally installed.

Please make your selections and then click on the *Install* button. This will begin the automatic process of component installation.

Go to **step 19** below.

15. If you do **not** have a previous version of SOMobjects installed, continue at this step:

After reading the text in the window, click on the *Continue* button. This causes the “Install” dialogue box to appear with the following choices:

- ☒ Update CONFIG.SYS
- ☐ Overwrite files

The default is to update CONFIG.SYS and *not* to overwrite existing files.

You normally should update CONFIG.SYS. This causes the appropriate paths and environment variables to be set. (Your old CONFIG.SYS will be saved in CONFIG.BAK.)

After making your choices, click on the *OK* button.

16. The next screen, entitled “Install — directories,” asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:

- a. The SOM Kernel is required by all other components.
- b. The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- c. The Utility Classes require the Interface Repository Framework.



17. After making your component selections, you can select a “base directory” in which to install the components. Your computer screen will display the default pathname for the base directory that the Toolkit uses. You can change the default, “C:\SOM”, to any <drive>:<path> you wish.
18. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic process of component installation.
 - If the components you wish to install require prerequisite components, the Installation Utility will ask if you want to install the prerequisites also. Click on the *Yes* button to continue installing the components you have selected and the prerequisite component(s). Or, click on the *No* button to return to the previous screen.
 - If there is insufficient space on the selected drive to install the SOMobjects component(s), you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.
19. The installation time will vary from machine to machine, but it is comparable to installation times for other products of similar size. An “Install — progress” screen gives you feedback on the installation’s progress.

The selected components will be installed in the base directory and the following subdirectories:

 - *bin* — contains executable programs
 - *lib* — contains library files and DLLs
 - *include* — contains IDL files and some header files

Note: Most header files for the *include* directory must be generated using the command files *somcorba.cmd*, *somstars.cmd*, or *somxh.cmd*. Please refer to the README file for more information.

 - *msg* — contains message files
 - *etc* — contains miscellaneous files, including the default Interface Repository file (*som.ir*)
 - *samples* — contains sample programs
 - *tmp* — used by the SOM Compiler for temporary files
20. After installation is complete, a dialog box entitled “Installation and Maintenance” will display. Click on the *OK* button.
21. Select *Exit* from the main PM “SOMobjects” window.



22. If you installed a SOMobjects Developer Toolkit onto a system that already contains another SOMobjects product, changes may be required in your CONFIG.SYS file. Be sure to read **"Installing over existing SOMobjects products"** on page 28.
23. Before using the SOMobjects Developer Toolkit, read the README file in the base directory for important post-installation instructions and information.

Miscellaneous

Some of the files (DLLs, mostly) provided by the SOMobjects Developer Toolkit are also provided by the SOMobjects Workstation Enabler and the SOMobjects Workgroup Enabler products. To prevent file loss and to ensure that the most up-to-date files are used, the install utility will not overwrite "new" files with "old". That is, it will prevent you from installing "old" Workgroup Enabler over "new" Toolkit DLLs. If you really wish to do this, you can assign the different products different base directories (C:\SOMTK and C:\SOMWG, for example) and determine yourself which DLLs are used (by placing the LIB subdirectory of the preferred product first in the LIBPATH).

Creating SOMobjects Toolkit installation diskettes from CD-ROM

To create installation diskettes for the SOMobjects Developer Toolkit from CD-ROM, perform the following steps:

1. Ensure that OS/2 2.1 or higher is installed on your machine.
2. Make sure that your CD-ROM drive is configured.
3. Insert the CD-ROM into the CD-ROM drive.
4. From an OS/2 command line, make the CD-ROM the default by entering:

h:

then, enter the command:

h:\install

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard PM interface. The title of this dialog box is "SOMobjects Install Selections."

5. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☒ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside "Create SOMobjects Developer Toolkit Installation diskettes" (or use the up/down arrow keys to toggle to that selection).

6. When you have made your selection, click on the *OK* button.
7. A full screen appears with the following text displayed:

Creating the SOMobjects Developer Toolkit installation diskettes for OS/2
Please load Disk #1
Press any key when ready...
8. Label a new diskette as "SOMINST1". Ensure that the diskette is *not* write protected. Then insert the diskette into drive A: and press *Enter* when you are done.
9. The diskette will be formatted, and data will be copied to the diskette.
10. Repeat Steps 8 through 9 with diskettes #2, #3, #4, and #5, but label the diskettes as "SOMINST2", "SOMINST3", "SOMINST4", and "SOMINST5", respectively.
11. Click on the *Exit* button to exit the INSTALL utility.

This completes creation of the installation diskettes. To install SOMobjects, see the topic "Installing SOMobjects Toolkit from diskettes."



Installing SOMobjects Workstation Enabler from CD-ROM

Before you begin, see the earlier topic “How SOMobjects is packaged: Your installation options” to determine which SOMobjects Workstation Enabler components you will need. To install the Workstation Enabler from CD-ROM, perform the following steps:

1. Ensure that OS/2 2.1 or higher is installed on your machine.
2. Make sure that your CD-ROM drive is configured.
3. If you will be using the Replication Framework, then install the appropriate network software. See the later main topic “Network Requirements for OS/2.”
4. Insert the CD-ROM into the CD-ROM drive.
5. From an OS/2 command line, make the CD-ROM the default by entering:

h:

then, enter the command:

h:\install

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard PM interface. The title of this dialog box is “SOMobjects Install Selections.”

6. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☒ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside “Install SOMobjects Workstation Enabler” (or use the up/down arrow keys to toggle to that selection).

7. When you have made your selection, click on the *OK* button.
8. An installation utility with a “SOMobjects” logo appears, having a standard PM interface. In the main installation window, you will see a text window entitled “SOMobjects Workstation Enabler Installation Instructions” that contains information to help you continue with installation.
9. If you do **not** have a previous version of SOMobjects Workstation Enabler installed, **go to step 15** below.

If you have previously installed **some** SOMobjects Workstation Enabler components but now need to install other components, **go to step 13** below.

If you are installing SOMobjects Workstation Enabler 2.1 over an **earlier version**, continue with step 10.



10. After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialogue box to appear with the following choices:

- ☒ Update the currently installed components
- ☐ Delete the currently installed components and re-install

The default is to update the currently installed components. Click on the check box of your choice, and then click on the *Continue* button.

11. The install program will ask you to make selections from the “Update” dialog box. The following selection options will be presented:

- ☒ Update CONFIG.SYS
- ☒ Save a backup version?

The default is to update CONFIG.SYS *and* to Save a backup version.

Important: You may *not* want to Save a backup, because continuing this installation process will not be successful. Read “**Installing over existing SOMobjects products**” on page 28, and follow those instructions to have a successful installation.

After making your selections, click on the *Update* button. This will begin the installation of selected components.

12. Go to **step 18** below.

13. If you have previously installed **some**, but not all, of the components available for SOMobjects Workstation Enabler, continue at this step:

After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialog box to appear with the following choices:

- ☐ Update the currently installed components
- ☐ Delete the currently installed components and re-install
- ☒ Install additional components

Select “Install additional components” and click on the *Continue* button.

Note: Before you select “Delete the currently installed components and re-install,” read “**Installing over existing SOMobjects products**” on page 28. The delete will fail unless you follow those directions.

14. The “Install” dialog box appears with the following options:

- ☒ Update CONFIG.SYS
- ☐ Overwrite files

The default is to update CONFIG.SYS and *not* to overwrite existing files.

After making your choice, click on *OK*.

The “Install — directories” dialog box is then presented, specifying the SOMobjects base directory and a list of uninstalled components that can be additionally installed.



Please make your selections and then click on the *Install* button. This will begin the automatic process of component installation.

Go to **step 19** below.

15. If you do **not** have a previous version of SOMobjects Workstation Enabler installed, continue at this step:

After reading the text in the window, click on the *Continue* button. This causes the "Install" dialogue box to appear with the following choices:

- ☒ Update CONFIG.SYS
- ☐ Overwrite files

The default is to update CONFIG.SYS and *not* to overwrite existing files.

You normally should update CONFIG.SYS. This causes the appropriate paths and environment variables to be set. (Your old CONFIG.SYS will be saved in CONFIG.BAK.)

After making your choices, click on the *OK* button.

16. The next screen, entitled "Install — directories," asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:

- a. The SOM Kernel is required by all other components.
- b. The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- c. The Utility Classes require the Interface Repository Framework.

17. After making your component selections, you can select a "base directory" in which to install the components. Your computer screen will display the default pathname for the base directory that the Toolkit uses. You can change the default, "C:\SOM", to any <drive>:<path> you wish.

18. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic install process.

- If the components you wish to install require prerequisite components, the Installation Utility will ask if you want to install the prerequisites also. Click on the *Yes* button to continue installing the components you have selected and the prerequisite component(s). Or, click on the *No* button to return to the previous screen.



- If there is insufficient space on the selected drive to install the SOMobjects component(s), you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.

19. The installation time will vary from machine to machine, but is comparable to installation times for other products of similar size. An “Install — progress” window gives you feedback on the installation’s progress.

The selected components will be installed in the base directory and the following subdirectories:

- `bin` — contains executable programs
- `lib` — contains library files and DLLs
- `msg` — contains message files
- `etc` — contains miscellaneous files, including the default Interface Repository file (`som.ir`)

20. After installation is complete, a dialog box entitled “Installation and Maintenance” will display. Click on the *OK* button.

21. Select *Exit* from the main PM “SOMobjects” window.

22. Now you will be back to the initial “SOMobjects Install Selections” window.

- a. Select *Exit* to exit the INSTALL utility.
- b. If you want to make another selection from the “SOMobjects Install Selections” window, go to the appropriate section in this document for further instructions.

23. If you installed a SOMobjects Workstation Enabler onto a system that already contains another SOMobjects product, changes may be required in your `CONFIG.SYS` file. Be sure to read “**Installing over existing SOMobjects products**” on page 28, and follow the pertinent instructions.

24. Before using the SOMobjects Workstation Enabler, read the `README` file in the base directory for important post-installation instructions and information.



Creating SOMobjects Workstation Enabler installation diskettes from CD-ROM

To create installation diskettes for the SOMobjects Workstation Enabler from CD-ROM, perform the following steps:

1. Ensure that OS/2 2.1 or higher is installed on your machine.
2. Make sure that your CD-ROM drive is configured.
3. Insert the CD-ROM into the CD-ROM drive.
4. From an OS/2 command line, make the CD-ROM the default by entering:

h:

then, enter the command:

h:\install

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard PM interface. The title of this dialog box is "SOMobjects Install Selections."

5. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☒ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside "Create SOMobjects Workstation Enabler Installation diskettes" (or use the up/down arrow keys to toggle to that selection).

6. When you have made your selection, click on the *OK* button.
7. An OS/2 full screen appears with the following text displayed:

Creating the SOM Workstation Enabler installation diskettes for OS/2
Please load Disk #1
Press any key when ready...
8. Label a new diskette as "SOMWSINST1". Ensure that the diskette is *not* write protected. Then insert the diskette into drive A: and press *Enter* when you are done.
9. The diskette will be formatted, and data will be copied to the diskette.
10. Repeat Steps 8 and 9 with diskette #2, but label the diskette as "SOMWSINST2".
11. Click on the *Exit* button to exit the INSTALL utility.

This completes creation of the installation diskettes. To install the Workstation Enabler, see "Installing SOMobjects Workstation Enabler from diskettes."

Installing the SOMobjects Publications and FrameViewer from CD-ROM

To install the SOMobjects Publications and FrameViewer from CD-ROM, perform the following steps:

1. Ensure that OS/2 2.1 or higher is installed on your machine.
2. Make sure that your CD-ROM drive is configured.
3. Insert the CD-ROM into the CD-ROM drive.
4. From an OS/2 command line, make the CD-ROM the default by entering:

h:

then, enter the command:

h:\install

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard PM interface. The title of this dialog box is "SOMobjects Install Selections."

5. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☒ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside "Install SOMobjects Publications and FrameViewer" (or use the up/down arrow keys to toggle to that selection).

6. When you have made your selection, click on the *OK* button.
7. An installation utility with a "SOMobjects" logo appears, having a standard PM interface. In the main installation window, you will see a text window entitled "SOMobjects Publications and FrameViewer Instructions" that contains information to help you continue with installation.
8. After reading the text in the window, click on the *Continue* button. This causes the "Install" dialogue box to appear with the following choice:
 - ☐ Overwrite files

The default is *not* to overwrite existing files.

After making your choice, click on the *OK* button.



9. The next screen, entitled “Install — directories,” asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:
 - a. The FrameViewer component is required by SOMobjects Publications. The FrameViewer must be installed either on a server directory or on a directory of your computer.
 - b. The SOMobjects Publications can be installed on a shared server directory, on a directory of your computer, or left on the CD-ROM. For example:
 - You might install the FrameViewer on your local machine and view the publications from a shared server directory, or
 - You might install only FrameViewer on your hard disk and view the Publications files from your CD-ROM under the SOMPUBS directory.
10. After making your component selections, you can select a “base directory” in which to install the components. Your computer screen will display the default pathname for the base directory that the SOMobjects Publications use. You can change the default, “C:\SOMVIEW”, to any *<drive>:<path>* you wish.
11. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic install process.
 - If there is insufficient space on the selected drive to install the SOMobjects and FrameViewer components, you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.
12. The installation time will vary from machine to machine, but is comparable to installation times for other products of similar size. An “Install — progress” window gives you feedback on the installation’s progress.

The selected components will be installed in the base directory and the following subdirectories:

- DICT — FrameViewer dictionary files
- FILTERS — FrameViewer filter files
- FMINIT — FrameViewer initialization files
- HELP — FrameViewer help files



- CC — SOMobjects Publications Collection Classes files
 - EMIT — SOMobjects Publications Emitter Framework files
 - REF — SOMobjects Publications Reference Manual files
 - USER — SOMobjects Publications User Guide files
 - QREF — SOMobjects Publications Quick Reference files
13. After installation is complete, a dialog box entitled "Installation and Maintenance" will display. Click on the *OK* button.
14. Select *Exit* from the main PM "SOMobjects" window.
15. When installation is complete, your desktop will display a "SOM Publications" folder containing a FrameViewer4 icon. Open the "SOM Publications" folder and double-click on the FrameViewer4 icon. (Note: OS/2 Warp users must first perform the steps in "Additional OS/2 Warp steps" below.)
- If you installed FrameViewer and the SOMobjects Publications files in the same location, invoking FrameViewer4 also opens file "intro1.doc," which brings up the main window "SOMobjects Developer Toolkit Online Documentation." File "intro1.doc" is the top level of the tree structure comprising the SOMobjects Publications. The first item on the menu is "How to use SOMobjects Online Documentation," which provides some useful information about using the FrameViewer itself, plus information about the organization of the SOMobjects Publications and how the hyperlinks are designed.
- Notes: (1) If you have installed the FrameViewer and SOMobjects Publications in different locations, modify the settings of the FrameViewer4 icon appropriately. (2) To use FrameViewer, your OS/2 system must have the WIN-OS2 386 Enhanced Mode capability installed, with 3.1 Enhanced Compatibility set (the install sets 3.1 Enhanced Compatibility on most systems).
16. Please refer to file FVREADME.TXT in the FrameViewer base directory (C:\SOMVIEW, by default) for more information on FrameViewer.

Setting the window size of FrameViewer

You can resize the FrameViewer window that displays the SOMobjects Publications by pressing the % button in the bottom of the frame and choosing "Set." After defining another %, choose "Set" again to select your new size. Then select "Fit window to page size." Two things are important, however:

- Do *not* choose a screen % where bold text turns "normal," because most hyperlinks are attached to bold terms. The "intro1.doc" file ships at 85%, and all subsequent files that you open by using hyperlinks will display in the same size. Other percentages that provide good resolution on most monitors are 83% or, if you want to maximize the window, 89%.
- Do *not* adjust the frame (with the cursor) so that it obscures the push buttons for PgDn, PgUp, GoBack, Top, and Close. The buttons do not work if you must scroll the page in order to display them.



Additional OS/2 Warp steps

Because of differences in the OS/2 Warp menu structure, the SOMobjects installation utility does not set the required 3.1 Enhanced Compatibility setting. Prior to opening the FrameViewer4 icon, perform the following steps:

1. Double-click on the SOMobjects Publications folder to open the "SOMobjects Publications — Icon View" window.
2. Place the cursor over the FrameViewer4 icon and click the right mouse button. In the menu that opens, click on "Settings."
3. In the resulting "FrameViewer4 — Settings" window, click on the "Session" tab, and from the session window select "WIN-OS2 Settings."
4. Then, from the "WIN-OS2 Settings — Categories" window, select "All DOS and WIN-OS/2 settings," and click on OK.
5. In the "WIN-OS2 Settings — All DOS and WIN-OS2 settings" window, under the option "Value (Default):"
 - Select 3.1 Enhanced Compatibility, and
 - Click on Save.
6. Then, close the "FrameViewer4 Settings" window.
7. Double-click on the FrameViewer4 icon to start the FrameViewer.
8. As FrameViewer starts, cancel the message "System Error — Sharing violation on drive C" a total of three times. (This spurious message has no effect.) Thereafter, use the FrameViewer normally to read the SOMobjects Publications.



Creating backup diskettes of the SOMobjects PostScript files

The SOMobjects CD-ROM contains PostScript files from which you can print all manuals in the SOMobjects documentation set. These manuals have the same content as the online SOMobjects Publications, but the PostScript files are formatted for 8.5" x 11" hardcopy output. You will need a total of 14 diskettes. See also "PostScript Files for SOMobjects Manuals" for the content of each file.

To create backup diskettes of the PostScript files from CD-ROM, perform the following steps:

1. Ensure that OS/2 2.1 or higher is installed on your machine.
2. Make sure that your CD-ROM drive is configured.
3. Insert the CD-ROM into the CD-ROM drive.
4. From an OS/2 command line, make the CD-ROM the default by entering:

h:

then, enter the command:

h:\install

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard PM interface. The title is "SOMobjects Install Selections."

5. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☒ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside "Create backup diskettes of the SOMobjects PostScript files" (or use the up/down arrow keys to toggle to that selection).

6. When you have made your selection, click on the *OK* button.
7. The following message will appear:

Copying SOMobjects Publications PostScript files to diskettes.
It requires 14 diskettes to copy all files.
Control-C to terminate or press Enter to continue.
Press any key when ready...
8. Label a new diskette as "SOMPUBS1". Ensure that the diskette is *not* write protected. Then insert the diskette into drive A: and press *Enter*.
9. The diskette will be formatted, and one or more PostScript files will be copied to the diskette.
10. Repeat Steps 8 and 9 with additional SOMPUBS*n* diskettes until done.
11. Click on the *Exit* button to exit the INSTALL utility.



Using a Server to Install SOMobjects

This section describes the two processes required to install SOMobjects products from a server:

- Copying SOMobjects Toolkit, SOMobjects Workstation Enabler, and SOMobjects Publications installation files to the server, and
- Installing SOMobjects products onto a personal computer from the installation files previously copied to the server.

Copying SOMobjects installation files to a server

To copy the installation files of SOMobjects Developer Toolkit, SOMobjects Workstation Enabler, and/or SOMobjects Publications and FrameViewer to a server, perform the following steps:

1. Login to the server, if necessary.
(Make certain that you have “write” access to the server directory on which you plan to copy the installation files.)
2. From an OS/2 command line, make the CD-ROM the default by entering:

h:

then, enter the command:

h:\CPTOSVR prod op dirname

where each parameter is as follows:

h: your CD-ROM drive.

prod **STK** copies SOMobjects Developer Toolkit installation files to the server, or

SWS copies SOMobjects Workstation Enabler installation files to the server, or

SPV copies SOMobjects Publications and Viewer installation files to the server.

op **OS2** copies the OS/2 version of SOMobjects files, or
WIN copies the Windows version of SOMobjects files.

dirname a fully qualified directory name in the server (if the indicated directory does not currently exist, it will be created)

For example, to copy the OS/2 version of the SOMobjects Developer Toolkit installation to the server directory X:\SOMINST\SOMTK, the command is issued as:

```
h:\CPTOSVR STK OS2 X:\SOMINST\SOMTK
```

Caution: Do *not* copy all SOMobjects product installations to one directory. You need to specify a separate directory for each product.

Installing SOMobjects products from a server

Perform the following steps to install SOMobjects Developer Toolkit, SOMobjects Workstation Enabler, or SOMobjects Publications and FrameViewer from a server to a personal computer.

Important: These steps assume that the SOMobjects files were previously copied to the server. For that, see the previous section, "Copying SOMobjects Installation Files to a Server."

1. From the workstation where you want to install SOM, login to the server if necessary.
2. From an OS/2 command line, specify:

`X:\SOMINST\SOMTK\INSTALL`

where:

X: drive letter of the login server

`SOMINST\SOMTK`

directory name where the SOMobjects installation files are installed

This invokes an installation dialog box having a standard PM interface. The title of this dialog box is "SOMobjects Install Selections."

3. Depending upon which product you want to install, continue as follows:
 - SOMobjects Developer Toolkit — Continue at **step 6** of "Installing the SOMobjects Toolkit from CD-ROM" on **page 30**.
 - SOMobjects Workstation Enabler — Continue at **step 6** of "Installing the SOMobjects Workstation Enabler from CD-ROM" on **page 36**.
 - SOMobjects Publications and FrameViewer — Continue at **step 5** of "Installing the SOMobjects Publications and FrameViewer from CD-ROM" on **page 41**.



Installing SOMobjects from Diskettes

This section describes how to install either the SOMobject Developer Toolkit or the SOMobjects Workstation Enabler from diskettes — either diskettes that you have created or diskettes obtained from IBM.

Installing SOMobjects Toolkit from diskettes

If SOMobjects diskettes have not yet been created, first refer to the section “Creating SOMobjects Toolkit installation diskettes from CD-ROM,” and perform the steps described there. Also see the earlier topic “How SOMobjects is packaged: Your installation options” to determine which components you will need. To install the SOMobjects Developer Toolkit from diskettes, perform the following steps:

1. Ensure that OS/2 2.1 or higher is installed on your machine.
2. If you will be using the Replication Framework, then install the appropriate network software. See the later main topic “Network Requirements for OS/2.”
3. Insert the first diskette (SOMINST1) into the diskette drive.
4. From an OS/2 command line, make the diskette drive the default by entering:

a:

Then, enter the command:

a:\install

An installation utility with a “SOMobjects” logo appears, having a standard PM interface. In the main installation window, you will see a text window entitled “SOMobjects Developer Toolkit Installation Instructions” that contains information to help you continue with installation.

5. If you do **not** have a previous version of SOMobjects installed, **go to step 11** below.

If you have previously installed **some** SOMobjects components but now need to install other components, **go to step 9** below.

If you are installing SOMobjects 2.1 over an **earlier version**, continue with step 6.

6. After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialogue box to appear with the following choices:

- ☒ Update the currently installed components
- ☐ Delete the currently installed components and re-install

The default is to update the currently installed components. Click on the check box of your choice, and then click on the *Continue* button.



7. The install program will ask you to make selections from the “Update” dialog box. The following selection options will be presented:

- Update CONFIG.SYS
- Save a backup version?

The default is to update CONFIG.SYS *and* to Save a backup version.

Important: You may *not* want to Save a backup, because continuing this installation process will not be successful. Read “**Installing over existing SOMobjects products**” on page 28, and follow those instructions to have a successful installation.

After making your selections, click on the *Update* button. This will begin the installation of selected components.

8. Go to **step 14** below.
9. If you have previously installed **some**, but not all, of the components available for SOMobjects Developer Toolkit, continue at this step:

After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialog box to appear with the following choices:

- ☐ Update the currently installed components
- ☐ Delete the currently installed components and re-install
- Install additional components

Select “Install additional components” and click on the *Continue* button.

Note: Before you select “Delete the currently installed components and re-install,” read “**Installing over existing SOMobjects products**” on page 28. The delete will fail unless you follow those directions.

10. The “Install” dialog box appears with the following options:

- Update CONFIG.SYS
- ☐ Overwrite files

The default is to update CONFIG.SYS and *not* to overwrite existing files.

After making your choices, click on *OK*.

The “Install — directories” dialog box is presented, specifying the SOMobjects base directory and a list of uninstalled components that can be additionally installed.

Please make your selections and then click on the *Install* button. This will begin the automatic process of component installation.

Go to **step 15** below.



11. If you do **not** have a previous version of SOMobjects installed, continue at this step:

After reading the text in the window, click on the *Continue* button. This causes the "Install" dialogue box to appear with the following choices:

- ☒ Update CONFIG.SYS
- ☐ Overwrite files

The default is to update CONFIG.SYS and *not* to overwrite existing files.

You normally should update CONFIG.SYS. This causes the appropriate paths and environment variables to be set. (Your old CONFIG.SYS will be saved in CONFIG.BAK.)

After making your choices, click on the *OK* button.

12. The next screen, entitled "Install — directories," asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:
- a. The SOM Kernel is required by all other components.
 - b. The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
 - c. The Utility Classes require the Interface Repository Framework.
13. After making your component selections, you can select a "base directory" in which to install the components. Your computer screen will display the default pathname for the base directory that the Toolkit uses. You can change the default, "C: \SOM", to any <drive>:<path> you wish.
14. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic process of component installation.
- If the components you wish to install require prerequisite components, the Installation Utility will ask if you want to install the prerequisites also. Click on the *Yes* button to continue installing the components you have selected and the prerequisite component(s). Or, click on the *No* button to return to the previous screen.
 - If there is insufficient space on the selected drive to install the SOMobjects component(s), you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.



15. The installation time will vary from machine to machine, but it is comparable to installation times for other products of similar size. An “Install — progress” window gives you feedback on the installation’s progress.

The selected components will be installed in the base directory and the following subdirectories:

- `bin` — contains executable programs
- `lib` — contains library files and DLLs
- `include` — contains IDL files and some header files

Note: Most header files for the *include* directory must be generated using the command files `somcorba.cmd`, `somstars.cmd`, or `somxh.cmd`. Please refer to the README file for more information.

- `msg` — contains message files
- `etc` — contains miscellaneous files, including the default Interface Repository file (`som.ir`)
- `samples` — contains sample programs
- `tmp` — used by the SOM Compiler for temporary files

16. After installation is complete, a dialog box entitled “Installation and Maintenance” will display. Click on the *OK* button.

17. Select *Exit* from the main PM “SOMobjects” window.

18. Now you will be back to the initial “SOMobjects Install Selections” window.

- a. Select *Exit* to exit the INSTALL utility.
- b. If you want to make another selection from the “SOMobjects Install Selections” window, go to the appropriate section in this document for further instructions.

19. If you installed a SOMobjects Developer Toolkit onto a system that already contains another SOMobjects product, changes may be required in your `CONFIG.SYS` file. Be sure to read “**Installing over existing SOMobjects products**” on page 28, and follow the pertinent instructions.

20. Before using the SOMobjects Developer Toolkit, read the [README](#) file in the base directory for important post-installation instructions and information.



Miscellaneous

Some of the files (DLLs, mostly) provided by the SOMobjects Developer Toolkit are also provided by the SOMobjects Workstation Enabler and the SOMobjects Workgroup Enabler products. To prevent file loss and to ensure that the most up-to-date files are used, the install utility will not overwrite “new” files with “old”. That is, it will prevent you from installing “old” Workgroup Enabler over “new” Toolkit DLLs. If you really wish to do this, you can assign the different products different base directories (C:\SOMTK and C:\SOMWG, for example) and determine yourself which DLLs are used (by placing the LIB subdirectory of the preferred product first in the LIBPATH).

Installing SOMobjects Workstation Enabler from diskettes

If SOMobjects diskettes have not yet been created, first refer to the section "Creating SOMobjects Workstation Enabler installation diskettes from CD-ROM," and perform the steps described there. Also see the earlier topic "How SOMobjects is packaged: Your installation options" to determine which SOMobjects Workstation Enabler components you will need.

To install the SOMobjects Workstation Enabler from diskettes, perform the following steps:

1. Ensure that OS/2 2.1 or higher is installed on your machine.
2. If you will be using the Replication Framework, then install the appropriate network software. See the later main topic "Network Requirements for OS/2."
3. Insert the first Workstation Enabler diskette (SOMWSINST1) into the diskette drive.
4. From an OS/2 command line, make the diskette drive the default by entering:

a:

Then, enter the command:

a:\install

This invokes an installation utility having a standard PM interface. In the main installation window, you will see a text window entitled "SOMobjects Workstation Enabler Installation" that contains information to help you continue with installation.

5. If you do **not** have a previous version of SOMobjects Workstation Enabler installed, **go to step 11** below.

If you have previously installed **some** SOMobjects Workstation Enabler components but now need to install other components, **go to step 9** below.

If you are installing SOMobjects Workstation Enabler 2.1 over an **earlier version**, continue with step 6.

6. After reading text in the window, click on the *Continue* button. This causes the "Installation options" dialogue box to appear with the following choices:

- ☒ Update the currently installed components
- ☐ Delete the currently installed components and re-install

The default is to update the currently installed components. Click on the check box of your choice, and then click on the *Continue* button.



7. The install program will ask you to make selections from the “Update” dialog box. The following selection options will be presented:

- Update CONFIG.SYS
- Save a backup version?

The default is to update CONFIG.SYS *and* to Save a backup version.

Important: You may *not* want to Save a backup, because continuing this installation process will not be successful. Read “**Installing over existing SOMobjects products**” on page 28, and follow those instructions to have a successful installation.

After making your selections, click on the *Update* button. This will begin the installation of selected components.

8. Go to **step 14** below.
9. If you have previously installed **some**, but not all, of the components available for SOMobjects Workstation Enabler, continue at this step:

After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialog box to appear with the following choices:

- ☐ Update the currently installed components
- ☐ Delete the currently installed components and re-install
- Install additional components

Select “Install additional components” and click on the *Continue* button.

Note: Before you select “Delete the currently installed components and re-install,” read “**Installing over existing SOMobjects products**” on page 28. The delete will fail unless you follow those directions.

10. The “Install” dialog box appears with the following options:

- Update CONFIG.SYS
- ☐ Overwrite files

The default is to update CONFIG.SYS and *not* to overwrite existing files.

After making your choice, click on *OK*.

The “Install — directories” dialog box is presented, specifying the SOMobjects base directory and a list of uninstalled components that can be additionally installed.

Please make your selections and then click on the *Install* button. This will begin the automatic process of component installation.

Go to **step 15** below.



11. If you do **not** have a previous version of SOMobjects Workstation Enabler installed, continue at this step:

After reading the text in the window, click on the *Continue* button. This causes the "Install" dialogue box to appear with the following choices:

- ☒ Update CONFIG.SYS
- ☐ Overwrite files

The default is to update CONFIG.SYS and *not* to overwrite existing files.

You normally should update CONFIG.SYS. This causes the appropriate paths and environment variables to be set. (Your old CONFIG.SYS will be saved in CONFIG.BAK.)

After making your choices, click on the *OK* button.

12. The next screen, entitled "Install — directories," asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:

- a. The SOM Kernel is required by all other components.
- b. The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- c. The Utility Classes require the Interface Repository Framework.

13. After making your component selections, you can select a "base directory" in which to install the components. Your computer screen will display the default pathname for the base directory that the Toolkit uses. You can change the default, "C: \SOM", to any <drive>:<path> you wish.

14. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic install process.

- If the components you wish to install require prerequisite components, the Installation Utility will ask if you want to install the prerequisites also. Click on the *Yes* button to continue installing the components you have selected and the prerequisite component(s). Or, click on the *No* button to return to the previous screen.
- If there is insufficient space on the selected drive to install the SOMobjects component(s), you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.



15. The installation time will vary from machine to machine, but is comparable to installation times for other products of similar size. An “Install — progress” window gives you feedback on the installation’s progress.

The selected components will be installed in the base directory and the following subdirectories:

- `bin` — contains executable programs
- `lib` — contains library files and DLLs
- `msg` — contains message files
- `etc` — contains miscellaneous files, including the default Interface Repository file (`som.ir`)

16. After installation is complete, a dialog box entitled “Installation and Maintenance” will display. Click on the *OK* button.

17. Select *Exit* from the main PM “SOMobjects” window.

18. Now you will be back to the initial “SOMobjects Install Selections” window.

- a. Select *Exit* to exit the INSTALL utility.
- b. If you want to make another selection from the “SOMobjects Install Selections” window, go to the appropriate section in this document for further instructions.

19. If you installed a SOMobjects Workstation Enabler onto a system that already contains another SOMobjects product, changes may be required in your `CONFIG.SYS` file. Be sure to read “**Installing over existing SOMobjects products**” on page 28, and follow the pertinent instructions.

20. Before using the SOMobjects Workstation Enabler, read the `README` file in the base directory for important post-installation instructions and information.



Network Requirements for OS/2

Networking support is required by several frameworks of SOMobjects on OS/2, as follows:

- Replication Framework requires networking support in
 - SOMobjects Developer Toolkit
 - SOMobjects Workstation Enabler
 - SOMobjects Workgroup Enabler
- Event Management Framework requires networking support in
 - SOMobjects Developer Toolkit
 - SOMobjects Workstation Enabler
 - SOMobjects Workgroup Enabler
- Distributed SOM (DSOM) Framework requires networking support in
 - SOMobjects Workgroup Enabler only

If you are using any of the above frameworks that require networking support, then before you can use SOMobjects with your application:

- The supported networking product software must be installed and configured on each machine, according to the instructions accompanying the product(s).
- The network itself must be configured, which includes assigning a *network address* and *hostname* to each machine. (Machines on the network are referred to as *hosts* or *nodes*.)

When using the SOMobjects Workgroup Enabler, these additional considerations apply:

- If you are using the Replication Framework, a network file system must also be installed for its operation.
- If you are using Distributed SOM, the DSOM configuration data files may be stored on a network file system for ease of maintenance, although this is optional.

Networking hardware and software requirements

On OS/2 Version 2.1 or 2.11, OS2 2.1 for Windows, or OS/2 Warp, the following network software product is supported with the SOMobjects Developer Toolkit and SOMobjects Workstation Enabler:

- Transmission Control Protocol/Internet Protocol (TCP/IP), Version 1.2.1 from IBM, with CSD UN34109. This product includes Network File System (NFS).

WIN-OS2 Restrictions: (1) The Replication Framework is not supported in the WIN-OS2 environment (Windows running on OS/2). (2) To run Distributed SOM



applications in the WIN-OS2 environment, you must use IBM TCP/IP for DOS/Windows (the only supported networking protocol for WIN-OS2). (3) Interoperability between WIN-OS2 and OS/2 within the same workstation is not supported.

Configuring your network

As part of network configuration, an address or a hostname must be assigned to each machine. This procedure is usually quite different for each network platform.

To facilitate the portability of SOMobjects products and applications to a variety of network platforms, a uniform communications model and network addressing scheme is used. It is based on the well-known *sockets interface*, *Internet addresses*, and *hostnames* used with TCP/IP.

Choosing an IP address and hostname

IP addresses

Each machine in a SOMobjects workgroup LAN must have a unique network address. The SOMobjects frameworks use a TCP/IP-style addressing scheme to identify hosts on the network. This scheme uses 32-bit Internet addresses (also known as “IP addresses”), and a “hosts” file for resolving symbolic hostnames to their network addresses. For uniformity, the SOMobjects frameworks always expect IP addresses to be used. For those protocols that do not normally use IP addresses to identify machines (such as NetBIOS and NetWare), SOMobjects products provide runtime support for translating IP addresses into the “native” addresses of the underlying protocol.

IP addresses are 32-bit integers that uniquely identify a host in a network. For convenience, the 32-bit IP address is usually expressed in four-part *dotted-decimal* form. For example:

```
129.35.64.7  
1.1.1.1  
200.001.001.255
```

Each of the four numbers represents the value of one 8-bit quantity in the 32-bit address.

If a machine is connected to multiple networks, it may have multiple IP addresses. Usually, each LAN adapter used to connect to a different network will be configured with a unique address.

It is essential that each host’s IP addresses must be unique. (That is, for each IP address assigned to a host, no other host can have that address.)

Hostnames

In a SOMobjects workgroup LAN, each machine is also assigned a unique hostname, and zero or more aliases. Hostnames are simple strings of alphanumeric characters, underscores (_), hyphens (-), and periods (.). For example:

```
server1
my_machine.austin.ibm.com
```

“Hosts” and “resolve” files

The association between hostnames and IP addresses is maintained in a “hosts” file or database. The “hosts” file may be stored on each machine, or if the network supports it, in a centralized name service. When a SOMobjects application uses a symbolic hostname to refer to a destination machine, the networking software resolves the symbolic name to an IP address by querying the “hosts” file or name service.

Each line of the HOSTS file takes the following format:

```
IPaddress hostname [ alias(es) ] [ # comment ]
```

The following example illustrates a “hosts” file that contains entries for three machines on a network.

```
129.5.24.1 host1 mailroom
129.5.24.3 host3 joe codeserver    # Joe's machine
129.5.24.4 host4.austin.ibm.com
```

In this example, the *hostname* host3 or the *aliases* joe or codeserver would be resolved by the networking software to the IP address of 129.5.24.3.

With TCP/IP, a Domain Name Service may also be used to resolve symbolic names to IP addresses. (Domain Name Service is not provided with SOMobjects NetBIOS Support or NetWare Support.) If a Domain Name Service is used, a local “resolve” file is used to identify the nameservers. For example, a “resolve” file might have the following contents:

```
domain austin.ibm.com
nameserver 129.34.128.245
nameserver 129.34.128.246
```

If a “resolve” file is present, the networking software will use the nameservers to resolve the symbolic hostname to an IP address. Note: Each nameserver will be tried in succession. If a nameserver is down, it may take 60 seconds or more to timeout.



Configuration of TCP/IP Networks

This section explains how to configure a TCP/IP network for use with SOMobjects applications.

Choosing IP addresses and hostnames

For each machine in your workgroup LAN, choose a unique IP address and hostname. The addresses and hostnames will be assigned to each machine during TCP/IP configuration.

Installing and configuring TCP/IP

On OS/2, TCP/IP and NFS are included in the TCP/IP version 1.2.1 for OS/2 product, and are installed and configured using the ICAT program. (ICAT is included with the TCP/IP product.) See the *TCP/IP Version 1.2.1 for OS/2 Installation Guide* for information on installing TCP/IP and NFS. After installing TCP/IP on OS/2, be sure to apply the CSD UN34109.

During the configuration procedure, ensure that you perform the following steps:

- Assign a unique IP address to each LAN adapter,
- Assign a unique hostname to the machine, and
- Install and enable NFS if the Replication Framework will be used.

Note: If you are not using the Replication Framework, you may choose to install NFS for use with the other SOMobjects frameworks in the workgroup environment. However, this is optional.

After you install and configure TCP/IP, a command file named `\TCPIP\BIN\TCPSTART.COM` is generated. This file contains commands to start TCP/IP execution with the correct configuration parameters, and it must be run each time the machine is rebooted. For convenience, this command file could be added to your `STARTUP.COM` file so it will be executed automatically upon system restart.

“Hosts” file

As part of the configuration, TCP/IP will insert an entry into the local “hosts” file for the machine. On OS/2, the hosts file is named `%ETC%\HOSTS`, where the `ETC` environment variable is set in `CONFIG.SYS`. (A typical value for `%ETC%` is `C:\TCPIP\ETC`.)



TCP/IP on OS/2 can also use a nameserver to resolve symbolic hostnames to IP addresses. If your network uses a nameserver, ensure the following is done:

- Add your machines' hostnames and IP addresses to the nameserver's database, and
- Include the address of the nameserver in your local "resolve" file

On OS/2, the "resolve" file is named %ETC%\RESOLV, where the ETC environment variable is set in CONFIG.SYS. (A typical value for %ETC% is C:\TCP\ETC.)

Other network configuration

After you install and configure TCP/IP and (optionally) NFS, SOMobjects products can be used without further network configuration.





3. Windows Installation/Configuration Guide

This section gives instructions for installing SOMobjects Developer Toolkit for Windows and SOMobjects Workstation Enabler for Windows, as well as the SOMobjects Publications and FrameViewer.

Software requirements for SOMobjects

The following software is prerequisite for SOMobjects:

- DOS, version 5.0 or higher.
- Microsoft Windows, version 3.1 or higher, running 386 enhanced mode.

For applications that use the Replication Framework with the Workstation Enabler, SOMobjects requires TCP/IP support.

SOMobjects Developer Toolkit, Release 2.1, supports the following Windows compilers: Borland C++ 4.02 for DOS, Windows, and Windows NT; Microsoft Visual C++ Professional Edition, Version 1.5; and Symantec C++ Professional, Version 6.1.

- Developers planning to use the Emitter Framework will require the Symantec C/C++ Compiler, version 6.1 or higher.

How SOMobjects is packaged: Your installation options

The SOMobjects product options consist of separately installable components, listed below by product option. (The number in parentheses after the component name is the amount of hard disk space required to install it.) Note: See the README.TXT file in the SOMobjects base directory for any post-installation instructions.

SOMobjects Developer Toolkit components

The SOMobjects Developer Toolkit is composed of the following separately installable components. To install the complete Toolkit, you will need approximately 14.8 megabytes of available disk space, including the samples source code and the C/C++ bindings generated by somcorba and somxh. To compile all of the samples requires approximately an additional 8 megabytes.

The recommended minimum total memory that a workstation needs for acceptable performance from the SOMobjects Developer Toolkit is about 12 megabytes. (Part of this memory is assumed to be in use by other applications that typically run continuously. Actual performance will be affected by the number of applications running and their memory requirements.)



- **SOM Compiler and Emitter Framework (~2500K)**
SOM Compiler creates C and C++ usage and implementation bindings from IDL interface descriptions. The Emitter Framework generates back-end programs for customized processing of IDL.
- **SOM Kernel (~730K)**
The SOM Kernel implements the SOM API.
- **Interface Repository Framework (~740K)**
The Interface Repository is a database that is generated by the SOM Compiler from IDL. The Interface Repository Framework is used to acquire object interface information dynamically.
- **Utility Classes (~650K)**
The Utility Classes provide metaclasses and classes for event management (Event Management Framework) and communications. Communications support includes a library that uses the TCP/IP sockets interface provided by TCP/IP products from a number of vendors. TCP/IP support is required by the Replication and Event Management Frameworks. (TCP/IP is purchased separately.)
- **Distributed SOM — DSOM (~930K)**
Distributed SOM (DSOM) enables applications to access objects across address spaces. That is, applications can access objects in other processes, even on different machines.
- **Persistence Framework (~450K)**
Persistence Framework supports the creation of classes whose instances are persistent, that is, objects that outlive the processes that create them.
- **Replication Framework (~380K)**
Replication Framework supports the creation of classes whose instances can be replicated about a network.
- **Collection Classes (~330K)**
Collection Classes includes classes for polymorphic containers such as dictionary, set, list, etc.
- **Samples (~2600K)**
Sample C and C++ code.

Any of these components can be separately installed, provided the following requirements are satisfied:

- The SOM Kernel component is required by all other components.
- The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- The Utility Classes require the Interface Repository Framework.
- The Replication Framework requires TCP/IP support.



SOMobjects Workstation Enabler components

Components of the SOMobjects Workstation Enabler are a subset of the components listed above for the SOMobjects Developer Toolkit. (See the preceding list for component descriptions, if needed. Observe that hard-disk requirements are less for the SOMobjects Workstation Enabler, totaling about 3.2 megabytes.) The recommended minimum total memory that a workstation needs in order to get acceptable performance from applications using the SOMobjects Workstation Enabler is about 10 megabytes.

- **SOM Kernel** (~390K)
- **Interface Repository Framework** (~660K)
- **Utility Classes** (~550K)
- **Distributed SOM — DSOM** (~800K)
- **Persistence Framework** (~220K)
- **Replication Framework** (~330K)
- **Collection Classes** (~210K)

Any of these components can be separately installed, provided the following requirements are satisfied:

- The SOM Kernel component is required by all other components.
- The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- The Utility Classes require the Interface Repository Framework component.
- The Replication Framework requires TCP/IP support.

SOMobjects Publications and FrameViewer components

These components provide online documentation for the SOMobjects Developer Toolkit:

- **SOMobjects Publications** (~10800K)
This set of files contains the same information as the hardcopy SOMobjects manuals. The content has been formatted for online viewing and includes hyperlinks that enable you to jump to related topics.
- **FrameViewer** (~5900K)
The FrameViewer is used for displaying the SOMobjects Publications.

The SOMobjects Publications component requires the FrameViewer.

Note: You might want to install only FrameViewer on your hard disk and view publications files from your CD-ROM under the SOMPUBS directory.



Determining what to install

If you are planning to develop programs that use SOMobjects, you will only need to install components of the SOMobjects Developer Toolkit. Installing the SOMobjects Workstation Enabler over a Toolkit installation is not necessary for developers, because the Toolkit contains all the SOM run-times of the Workstation Enabler.

Installing the SOMobjects Workstation Enabler is necessary (a) if you do *not* plan to build applications that use SOMobjects, but (b) you plan to run an application that uses SOMobjects run-time components and you do *not* have either an AIX 4.1.1 or OS/2 Warp operating system, both of which contain the SOMobjects Workstation Enabler.

A developer might want to install the Workstation Enabler after an application has been created, in order to test the Enabler run times with the application, independently of the SOMobjects Toolkit.

The SOMobjects Publications and FrameViewer should be installed at each site in order to have convenient online documentation.

A note to SOMobjects application developers

If you will be creating applications that package and ship the SOMobjects Workstation Enabler run time, it is essential that you pay particular attention to how and where you install the SOMobjects run-time components for your applications. Before packaging your application, be sure to read Section 5, "Installation Support for SOMobjects Applications," later in this guide.

Obtaining service and technical support

For complete information on obtaining SOMobjects support on Windows, see the main topic "Service and Technical Support for SOMobjects" later in this installation/configuration guide.



Installing SOMobjects from the CD-ROM

This section describes how to use a CD-ROM to install the IBM SOMobjects Developer Toolkit on a personal computer running DOS/Windows. There are three product options that you can install:

- SOMobjects Developer Toolkit
- SOMobjects Workstation Enabler
- SOMobjects Publications and FrameViewer

Each of the foregoing product options is composed of multiple components, some of which are optional. See the earlier topic “How SOMobjects is packaged: Your installation options” to determine which components you will need.

Installing the SOMobjects Toolkit from CD-ROM

To install the SOMobjects Developer Toolkit from CD-ROM, perform the following steps:

1. If DOS (version 5.x or 6.x) and Windows 3.1 are not already on the machine, install them.
2. Make sure to configure your CD-ROM drive.
3. If you will be using the Replication Framework, then install the appropriate network software. See the later main topic “Network Requirements for Windows.”
4. Insert the CD-ROM into the CD-ROM drive.
5. Using the Run option of the Windows Program Manager, specify:

`h:\setup`

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard Windows interface. The title of this dialog box is “SOMobjects Install Selections.”

6. There are six options you can select from the dialog box:

- ☒ Install SOMobjects Developer Toolkit
- ☐ Create SOMobjects Developer Toolkit Installation diskettes
- ☐ Install SOMobjects Workstation Enabler
- ☐ Create SOMobjects Workstation Enabler Installation diskettes
- ☐ Install SOMobjects Publications and FrameViewer
- ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside “Install SOMobjects Developer Toolkit” (or use the up/down arrow keys to toggle to that selection).



7. When you have made your selection, click on the *OK* button.
8. An installation utility with a “SOMobjects” logo appears, having a standard Windows interface. In the main installation window, you will see a text window entitled “SOMobjects Developer Toolkit Installation Instructions” that contains information to help you continue with installation. Please familiarize yourself with the information before proceeding.
9. If you do **not** have a previous version of SOMobjects Developer Toolkit Version 2.1 installed, **go to step 15** below.
Important: Go to step 15 if you have SOMobjects Version 2.0 installed and want to install Version 2.1 in the same directory.

If you have previously installed **some** SOMobjects Version 2.1 components but now need to install other components, **go to step 13** below.

If you are installing SOMobjects 2.1 over an **earlier version** of Version 2.1, continue with step 10.
10. After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialogue box to appear with the following choices:
 - ☒ Update the currently installed components
 - ☐ Delete the currently installed components and re-installThe default is to update the currently installed components. Click on the check box of your choice, and then click on the *Continue* button.
11. The install program will ask you to make selections from the “Update” dialog box. The following selection options will be presented:
 - ☒ Update AUTOEXEC.BAT
 - ☒ Save a backup version?The default is to update AUTOEXEC.BAT *and* to Save a backup version.
After making your selections, click on the *Update* button. This will begin the installation of selected components.
12. Go to **step 18** below.
13. If you have previously installed **some**, but not all, of the components available for SOMobjects Developer Toolkit, continue at this step:
After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialog box to appear with the following choices:
 - ☐ Update the currently installed components
 - ☐ Delete the currently installed components and re-install
 - ☒ Install additional componentsSelect “Install additional components” and click on the *Continue* button.



14. The “Install” dialog box appears with the following options:

- ☒ Update AUTOEXEC.BAT
- ☐ Overwrite files

The default is to update AUTOEXEC.BAT and *not* to overwrite existing files.

After making your choice, click on *OK*.

The “Install — directories” dialog box is presented, specifying the SOMobjects base directory and a list of uninstalled components that can be additionally installed.

Please make your selections and then click on the *Install* button. This will begin the automatic process of component installation.

Go to **step 19** below.

15. If you do **not** have a previous version of SOMobjects 2.1 installed, or if you are installing SOMobjects 2.1 over SOMobjects 2.0, continue at this step:

After reading the text in the window, click on the *Continue* button. This causes the “Install” dialogue box to appear with the following choices:

- ☒ Update AUTOEXEC.BAT
- ☐ Overwrite files

The default is to update AUTOEXEC.BAT and *not* to overwrite existing files. Important: If you are installing Version 2.1 over 2.0, be sure to select the “Overwrite files” option.

You normally should update AUTOEXEC.BAT. This causes the appropriate paths and environment variables to be set. (Your old AUTOEXEC.BAT will be saved in AUTOEXEC.BAK.)

After making your choices, click on the *OK* button.

16. The next screen, entitled “Install — directories,” asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:

- a. The SOM Kernel is required by all other components.
- b. The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
- c. The Utility Classes require the Interface Repository Framework.

17. After making your component selections, you can select a “base directory” in which to install the components. Your computer screen will display the default pathname for the base directory that the Toolkit uses. You can change the default, “C: \SOM”, to any <drive>:<path> you wish.



18. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic process of component installation.

- If the components you wish to install require prerequisite components, the Installation Utility will ask if you want to install the prerequisites also. Click on the *Yes* button to continue installing the components you have selected and the prerequisite component(s). Or, click on the *No* button to return to the previous screen.
- If there is insufficient space on the selected drive to install the SOMobjects component(s), you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.

19. The installation time will vary from machine to machine, but it is comparable to installation times for other products of similar size. An “Install — progress” screen gives you feedback on the installation’s progress.

The selected components will be installed in the base directory and the following subdirectories:

- *bin* — contains executable programs and DLLs
- *lib* — contains library files
- *include* — contains IDL files and some header files

Note: Most header files for the *include* directory must be generated using the batch files *somcorba.bat*, *somstars.bat*, or *somxh.bat*. Please refer to the README.TXT file for more information.

- *msg* — contains message files
- *etc* — contains miscellaneous files, including the default Interface Repository file (*som.ir*)
- *samples* — contains sample programs
- *tmp* — used by the SOM Compiler for temporary files

20. If you have selected the component “Utility Classes and TCP/IP Support,” a dialog box entitled “Configure TCPIP” will display. You can use the mouse to check the radio button that selects one of the options:

- ☐ IBM TCPIP
- ☐ FTP TCPIP
- ☐ NetManage TCPIP
- ☐ SunSelect TCPIP

Click on the *OK* button. This program will then copy the appropriate files required for your TCPIP Support.



21. After installation is complete, a dialog box entitled "Installation and Maintenance" will display. Click on the *OK* button.
22. Select *Exit* from the main "SOMobjects" window to exit the SETUP utility.
23. If you installed the SOMobjects Developer Toolkit onto a system that already contains another SOMobjects product and you did *not* install it into the same directory as the previously installed product, make sure that the environment variable SOMBASE in your AUTOEXEC.BAT file is set to the appropriate directory.
24. Before using the SOMobjects Developer Toolkit, read the README.TXT file in the base directory for important post-installation instructions and information.

Required Windows settings

Make sure your TEMP environment variable specifies a directory that can be used for temporary file storage.

If you select "Update AUTOEXEC.BAT" while running the SOMobjects setup program, SHARE is automatically appended to your AUTOEXEC.BAT file. Please ensure that your AUTOEXEC.BAT contains only one invocation of the following command:

SHARE

This starts the SHARE program, which installs file-sharing and locking capabilities on your disk and network drives. This is important when using the Interface Repository, DSOM, Persistence, or Replication frameworks. For more information, see your DOS/Windows documentation, or type HELP SHARE.



Creating SOMobjects Toolkit installation diskettes from CD-ROM

To create installation diskettes for the SOMobjects Developer Toolkit from CD-ROM, perform the following steps:

1. If DOS (version 5.x or 6.x) and Windows 3.1 are not already on the machine, install them.
2. Make sure that your CD-ROM drive is configured.
3. Insert the CD-ROM into the CD-ROM drive.
4. Using the Run option of the Windows Program Manager, specify:

`h:\setup`

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard Windows interface. The title of this dialog box is "SOMobjects Install Selections."

5. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☒ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside "Create SOMobjects Developer Toolkit Installation diskettes" (or use the up/down arrow keys to toggle to that selection).

6. When you have made your selection, click on the *OK* button.
7. A DOS full screen appears with the following text displayed:

Creating SOMobjects Developer Toolkit installation diskettes for Windows
Please load Disk #1
Press any key when ready...
8. Label a new diskette as "SOMINST1". Ensure that the diskette is *not* write protected. Then insert the diskette into drive A: and press *Enter* when done.
9. The diskette will be formatted. When asked whether to "Format Another (Y/N):", select N.
10. Data will be copied to the diskette.
11. Repeat Steps 8 through 10 with diskettes #2, #3, #4, and #5, but label the diskettes as "SOMINST2", "SOMINST3", "SOMINST4", and "SOMINST5", respectively.
12. Click on the *Exit* button to exit the SETUP utility.

This completes creation of the installation diskettes. To install SOMobjects, see the topic "Installing SOMobjects Toolkit from diskettes."



Installing SOMobjects Workstation Enabler from CD-ROM

Before you begin, see the earlier topic “How SOMobjects is packaged: Your installation options” to determine which SOMobjects Workstation Enabler components you will need. To install the Workstation Enabler from CD-ROM, perform the following steps:

1. If DOS (version 5.x or 6.x) and Windows 3.1 are not already on the machine, install them.
2. Make sure that your CD-ROM drive is configured.
3. If you will be using the Replication Framework, then install the appropriate network software. See the later main topic “Network Requirements for Windows.”
4. Insert the CD-ROM into the CD-ROM drive.
5. Using the Run option of the Windows Program Manager, specify:

`h:\setup`

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard Windows interface. The title of this dialog box is “SOMobjects Install Selections.”

6. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☒ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside “Install SOMobjects Workstation Enabler” (or use the up/down arrow keys to toggle to that selection).

7. When you have made your selection, click on the *OK* button.
8. An installation utility with a “SOMobjects” logo appears, having a standard Windows interface. In the main installation window, you will see a text window entitled “SOMobjects Workstation Enabler Installation Instructions” that contains information to help you continue with installation.
9. If you do **not** have a previous version of SOMobjects Workstation Enabler Version 2.1 installed, **go to step 15** below.
Important: Go to step 15 if you have SOMobjects Version 2.0 installed and want to install Version 2.1 in the same directory.

If you have previously installed **some** SOMobjects Workstation Enabler 2.1 components but now need to install other components, **go to step 13** below.

If you are installing SOMobjects Workstation Enabler 2.1 over an **earlier version** of Version 2.1, continue with step 10.



10. After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialogue box to appear with the following choices:

- ☒ Update the currently installed components
- ☐ Delete the currently installed components and re-install

The default is to update the currently installed components. Click on the check box of your choice, and then click on the *Continue* button.

11. The install program will ask you to make selections from the “Update” dialog box. The following selection options will be presented:

- ☒ Update AUTOEXEC.BAT
- ☒ Save a backup version?

The default is to update AUTOEXEC.BAT *and* to Save a backup version.

After making your selections, click on the *Update* button. This will begin the installation of selected components.

12. Go to **step 18** below.

13. If you have previously installed **some**, but not all, of the components available for SOMobjects Workstation Enabler, continue at this step:

After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialog box to appear with the following choices:

- ☐ Update the currently installed components
- ☐ Delete the currently installed components and re-install
- ☒ Install additional components

Select “Install additional components” and click on the *Continue* button.

14. The “Install” dialog box appears with the following options:

- ☒ Update AUTOEXEC.BAT
- ☐ Overwrite files

The default is to update AUTOEXEC.BAT and *not* to overwrite existing files.

After making your choice, click on *OK*.

The “Install — directories” dialog box is then presented, specifying the SOMobjects base directory and a list of uninstalled components that can be additionally installed.

Please make your selections and then click on the *Install* button. This will begin the automatic process of component installation.

Go to **step 19** below.



15. If you do **not** have a previous version of SOMobjects Workstation Enabler 2.1 installed, or if you are installing Version 2.1 over Version 2.0, continue at this step:

After reading the text in the window, click on the *Continue* button. This causes the “Install” dialogue box to appear with the following choices:

- ☒ Update AUTOEXEC.BAT
- ☐ Overwrite files

The default is to update AUTOEXEC.BAT and *not* to overwrite existing files. Important: If you are installing Version 2.1 over 2.0, be sure to select the “Overwrite files” option.

You normally should update AUTOEXEC.BAT. This causes the appropriate paths and environment variables to be set. (Your old AUTOEXEC.BAT will be saved in AUTOEXEC.BAK.)

After making your choices, click on the *OK* button.

16. The next screen, entitled “Install — directories,” asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:
- a. The SOM Kernel is required by all other components.
 - b. The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
 - c. The Utility Classes require the Interface Repository Framework.
17. After making your component selections, you can select a “base directory” in which to install the components. Your computer screen will display the default pathname for the base directory that the Toolkit uses. You can change the default, “C:\SOM”, to any <drive>:<path> you wish.
18. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic install process.
- If the components you wish to install require prerequisite components, the Installation Utility will ask if you want to install the prerequisites also. Click on the *Yes* button to continue installing the components you have selected and the prerequisite component(s). Or, click on the *No* button to return to the previous screen.



- If there is insufficient space on the selected drive to install the SOMobjects component(s), you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.

19. The installation time will vary from machine to machine, but is comparable to installation times for other products of similar size. An “Install — progress” window gives you feedback on the installation’s progress.

The selected components will be installed in the base directory and the following subdirectories:

- `bin` — contains executable programs and DLLs
- `lib` — contains library files
- `msg` — contains message files
- `etc` — contains miscellaneous files, including the default Interface Repository file (`som.ir`)

20. If you have selected the component “Utility Classes and TCP/IP Support,” a dialog box entitled “Configure TCPIP” will display. You can use the mouse to check the radio button that selects one of the options:

- ☐ IBM TCPIP
- ☐ FTP TCPIP
- ☐ NetManage TCPIP
- ☐ SunSelect TCPIP

Click on the *OK* button. This program will then copy the appropriate files required for your TCPIP Support.

21. After installation is complete, a dialog box entitled “Installation and Maintenance” will display. Click on the *OK* button.

22. Select *Exit* from the main “SOMobjects” window to exit SETUP.

23. If you installed the SOMobjects Workstation Enabler onto a system that already contains another SOMobjects product and you did *not* install it into the same directory as the previously installed product, make sure that the environment variable `SOMBASE` in your `AUTOEXEC.BAT` file is set to the appropriate directory.

24. Before using the SOMobjects Workstation Enabler, read the `README.TXT` file in the base directory for important post-installation instructions and information.



Required Windows Settings

Make sure your TEMP environment variable specifies a directory that can be used for temporary file storage.

If you select "Update AUTOEXEC.BAT" while running the SOMobjects setup program, SHARE is automatically appended to your AUTOEXEC.BAT file. Please ensure that your AUTOEXEC.BAT contains only one invocation of the following command:

SHARE

This starts the SHARE program, which installs file-sharing and locking capabilities on your disk and network drives. This is important when using the Interface Repository, DSOM, Persistence, or Replication frameworks. For more information, see your DOS/Windows documentation, or type HELP SHARE.



Creating SOMobjects Workstation Enabler installation diskettes from CD-ROM

To create installation diskettes for the SOMobjects Workstation Enabler from CD-ROM, perform the following steps:

1. If DOS (version 5.x or 6.x) and Windows 3.1 are not already on the machine, install them.
2. Make sure that your CD-ROM drive is configured.
3. Insert the CD-ROM into the CD-ROM drive.
4. Using the Run option of the Windows Program Manager, specify:

`h:\setup`

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard Windows interface. The title of this dialog box is "SOMobjects Install Selections."

5. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☒ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside "Create SOMobjects Workstation Enabler Installation diskettes" (or use the up/down arrow keys to toggle to it).

6. When you have made your selection, click on the *OK* button.
7. A DOS full screen appears with the following text displayed:

Creating SOM Workstation Enabler installation diskettes for Windows
Please load Disk #1
Press any key when ready...
8. Label a new diskette as "SOMWSINST1". Ensure that the diskette is *not* write protected. Then insert the diskette into drive A: and press *Enter* when you are done.
9. The diskette will be formatted. When asked whether to "Format Another (Y/N):", select N.
10. Data will be copied to the diskette.
11. Repeat Steps 8 through 10 with diskette #2, but label the diskette as "SOMWSINST2".
12. Click on the *Exit* button to exit the SETUP utility.

This completes creation of the installation diskettes. To install the Workstation Enabler, see "Installing SOMobjects Workstation Enabler from diskettes."

Installing the SOMobjects Publications and FrameViewer from CD-ROM

To install the SOMobjects Publications and FrameViewer from CD-ROM, perform the following steps:

1. If DOS (version 5.x or 6.x) and Windows 3.1 are not already on the machine, install them.
2. Make sure that your CD-ROM drive is configured.
3. Insert the CD-ROM into the CD-ROM drive.
4. Using the Run option of the Windows Program Manager, specify:

`h:\setup`

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard Windows interface. The title of this dialog box is "SOMobjects Install Selections."

5. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☒ Install SOMobjects Publications and FrameViewer
 - ☐ Create backup diskettes of the SOMobjects PostScript files

Click on the check box beside "Install SOMobjects Publications and FrameViewer" (or use the up/down arrow keys to toggle to that selection).

6. When you have made your selection, click on the *OK* button.
7. An installation utility with a "SOMobjects" logo appears, having a standard Windows interface. In the main installation window, you will see a text window entitled "SOMobjects Publications and FrameViewer Instructions" that contains information to help you continue with installation.
8. After reading the text in the window, click on the *Continue* button. This causes the "Install" dialogue box to appear with the following choice:
 - ☐ Overwrite files

The default is *not* to overwrite existing files.

After making your choice, click on the *OK* button.

9. The next screen, entitled "Install — directories," asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are



using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:

- a. The FrameViewer component is required by SOMobjects Publications. The FrameViewer must be installed either on a server directory or on a directory of your computer.
 - b. The SOMobjects Publications can be installed on a shared server directory, on a directory of your computer, or left on the CD-ROM. For example:
 - You might install the FrameViewer on your local machine and view the publications from a shared server directory, or
 - You might install only FrameViewer on your hard disk and view the Publications files from your CD-ROM under the SOMPUBS directory.
10. After making your component selections, you can select a “base directory” in which to install the components. Your computer screen will display the default pathname for the base directory that the SOMobjects Publications use. You can change the default, “C:\SOMVIEW”, to any <drive>:<path> you wish.
11. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic install process.
- If there is insufficient space on the selected drive to install the SOMobjects and FrameViewer components, you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.
12. The installation time will vary from machine to machine, but is comparable to installation times for other products of similar size. An “Install — progress” window gives you feedback on the installation’s progress.

The selected components will be installed in the base directory and the following subdirectories:

- DICT — FrameViewer dictionary files
- FILTERS — FrameViewer filter files
- FMINIT — FrameViewer initialization files
- HELP — FrameViewer help files
- CC — SOMobjects Publications Collection Classes files
- EMIT — SOMobjects Publications Emitter Framework files
- REF — SOMobjects Publications Reference Manual files
- USER — SOMobjects Publications User Guide files
- QREF — SOMobjects Publications Quick Reference files



13. After installation is complete, a dialog box entitled "Installation and Maintenance" will display. Click on the *OK* button.
14. Select *Exit* from the main "SOMobjects" window to exit the SETUP utility.
15. When installation is complete, your desktop will display a "SOM Publications" folder containing a FrameViewer4 icon. Open the "SOM Publications" folder and double-click on the FrameViewer4 icon.

If you installed FrameViewer and the SOMobjects Publications files in the same location, invoking FrameViewer4 also opens file "intro1.doc," which brings up the main window "SOMobjects Developer Toolkit Online Documentation." File "intro1.doc" is the top level of the tree structure comprising the SOMobjects Publications. The first item on the menu is "How to use SOMobjects Online Documentation," which will give you some useful information about using the FrameViewer itself, as well as information about the organization of the SOMobjects Publications and how the hyperlinks are designed.

Notes: (1) If you have installed the FrameViewer and SOMobjects Publications in different locations, modify the settings of the FrameViewer4 icon appropriately. (2) To use FrameViewer, your Windows system must have the 386 Enhanced Mode capability installed.

16. Please refer to file FVREADME.TXT in the FrameViewer base directory (C:\SOMVIEW, by default) for more information on FrameViewer.

Setting the window size of FrameViewer

You can resize the FrameViewer window that displays the SOMobjects Publications by pressing the % button in the bottom of the frame and choosing "Set." After defining another %, choose "Set" again to select your new size. Then select "Fit window to page size." Two things are important, however:

- Do *not* choose a screen % where bold text turns "normal," because most hyperlinks are attached to bold terms. The "intro1.doc" file ships at 85%, and all subsequent files that you open by using hyperlinks will display in the same size. Other percentages that provide good resolution on most monitors are 83% or, if you want to maximize the window, 89%.
- Do *not* adjust the frame (with the cursor) so that it obscures the push buttons for PgDn, PgUp, GoBack, Top, and Close. The buttons do not work if you must scroll the page in order to display them.



Creating backup diskettes of the SOMobjects PostScript files

The SOMobjects CD-ROM contains PostScript files from which you can print all manuals in the SOMobjects documentation set. These manuals have the same content as the online SOMobjects Publications, but the PostScript files are formatted for 8.5" x 11" hardcopy output. You will need a total of 14 diskettes. See also "PostScript Files for SOMobjects Manuals" for the content of each file.

To backup the PostScript files from CD-ROM, perform the following steps:

1. If DOS (version 5.x or 6.x) and Windows 3.1 are not already on the machine, install them.
2. Make sure that your CD-ROM drive is configured.
3. Insert the CD-ROM into the CD-ROM drive.
4. Using the Run option of the Windows Program Manager, specify:

h:\setup

where *h:* is your CD-ROM drive letter. This invokes an installation dialog box having a standard Windows interface. The title of this dialog box is "SOMobjects Install Selections."

5. There are six options you can select from the dialog box:
 - ☐ Install SOMobjects Developer Toolkit
 - ☐ Create SOMobjects Developer Toolkit Installation diskettes
 - ☐ Install SOMobjects Workstation Enabler
 - ☐ Create SOMobjects Workstation Enabler Installation diskettes
 - ☐ Install SOMobjects Publications and FrameViewer
 - ☒ Create backup diskettes of PostScript files containing the SOMobjects user manuals (formatted for hardcopy output)

Click on the check box beside "Create backup diskettes of the PostScript files..." (or use the *Tab* key and the up/down arrow keys to toggle to that selection).

6. When you have made your selection, click on the *OK* button.
7. The following message will appear:

Copying SOMobjects Publications PostScript files to diskettes.
It requires 14 diskettes to copy all PostScript files.
Control-C to terminate or press Enter to continue.
Press any key to continue...
8. Label a new diskette as "SOMPUBS1". Ensure that the diskette is *not* write protected. Then insert the diskette into drive A: and press *Enter*.
9. The diskette will be formatted. When asked whether to "Format Another (Y/N):", select N.
10. One or more PostScript files will be copied to the diskette.
11. Repeat Steps 8 through 10 with additional SOMPUBS*n* diskettes until done.
12. Click on the *Exit* button to exit the SETUP utility.



Using a Server to Install SOMobjects

This section describes the two processes required to install SOMobjects products from a server:

- Copying SOMobjects Toolkit, SOMobjects Workstation Enabler, and SOMobjects Publications installation files to the server, and
- Installing SOMobjects products onto a personal computer from the installation files previously copied to the server.

Copying SOMobjects installation files to a server

To copy the installation files of SOMobjects Developer Toolkit, SOMobjects Workstation Enabler, and/or SOMobjects Publications and FrameViewer to a server, perform the following steps:

1. Login to the server, if necessary.
(Make certain that you have “write” access to the server directory on which you plan to copy the installation files.)

2. From a DOS prompt, make the CD-ROM the default by entering:

h:

then, enter the command:

h:\CPTOSVR prod op dirname

where each parameter is as follows:

h: your CD-ROM drive.

prod **STK** copies SOMobjects Developer Toolkit installation files to the server, or

SWS copies SOMobjects Workstation Enabler installation files to the server, or

SPV copies SOMobjects Publications and Viewer installation files to the server.

op **WIN** copies the Windows version of SOMobjects files, or
OS2 copies the OS/2 version of SOMobjects files.

dirname a fully qualified directory name in the server (if the indicated directory does not currently exist, it will be created)

For example, to copy the Windows version of the SOMobjects Developer Toolkit installation to the server directory X:\SOMINST\SOMTK, the command is issued as:

```
h:\CPTOSVR STK WIN X:\SOMINST\SOMTK
```

Caution: Do *not* copy all SOMobjects product installations to one directory. You need to specify a separate directory for each product.



Installing SOMobjects products from a server

Perform the following steps to install SOMobjects Developer Toolkit, SOMobjects Workstation Enabler, or SOMobjects Publications and FrameViewer from a server to a personal computer.

Important: These steps assume that the SOMobjects files were previously copied to the server. For that, see the previous section, “Copying SOMobjects Installation Files to a Server.”

1. From the workstation where you want to install SOM, login to the server if necessary.
2. Using the Run option of the Windows Program Manager, specify:

`X:\SOMINST\SOMTK\SETUP`

where:

X: drive letter of the login server

`SOMINST\SOMTK`

directory name where the SOMobjects installation files are installed

This invokes an installation dialog box having a standard Windows interface. The title of this dialog box is “SOMobjects Install Selections.”

3. Depending upon which product you want to install, continue as follows:
 - SOMobjects Developer Toolkit — Continue at **step 6** of “Installing the SOMobjects Toolkit from CD-ROM” on **page 67**.
 - SOMobjects Workstation Enabler — Continue at **step 6** of “Installing the SOMobjects Workstation Enabler from CD-ROM” on **page 73**.
 - SOMobjects Publications and FrameViewer — Continue at **step 5** of “Installing the SOMobjects Publications and FrameViewer from CD-ROM” on **page 79**.

Required Windows settings

Make sure your TEMP environment variable specifies a directory that can be used for temporary file storage.

If you select “Update AUTOEXEC.BAT” while running the SOMobjects setup program, SHARE is automatically appended to your AUTOEXEC.BAT file. Please ensure that your AUTOEXEC.BAT contains only one invocation of the following command:

SHARE

This starts the SHARE program, which installs file-sharing and locking capabilities on your disk and network drives. This is important when using the Interface Repository, DSOM, Persistence, or Replication frameworks. For more information, see your DOS/Windows documentation, or type HELP SHARE.

Installing SOMobjects from Diskettes

This section describes how to install either the SOMobject Developer Toolkit or the SOMobjects Workstation Enabler from diskettes — either diskettes that you have created or diskettes obtained from IBM.

Installing SOMobjects Toolkit from diskettes

If SOMobjects diskettes have not yet been created, first refer to the section “Creating SOMobjects Toolkit installation diskettes from CD-ROM,” and perform the steps described there. Also see the earlier topic “How SOMobjects is packaged: Your installation options” to determine which components you will need. To install the SOMobjects Developer Toolkit from diskettes, perform the following steps:

1. If DOS (version 5.x or 6.x) and Windows 3.1 are not already on the machine, install them.
2. If you will be using the Replication Framework, then install the appropriate network software. See the later main topic “Network Requirements for Windows.”
3. Insert the first diskette (SOMINST1) into the diskette drive.
4. Using the Run option of the Windows Program Manager, specify:

a:\setup

An installation utility with a “SOMobjects” logo appears, having a standard Windows interface. In the main installation window, you will see a text window entitled “SOMobjects Developer Toolkit Installation Instructions” that contains information to help you continue with installation. Please familiarize yourself with the information before proceeding.

5. If you do **not** have a previous version of SOMobjects Version 2.1 installed, **go to step 11** below.

Important: Go to step 11 if you have SOMobjects Version 2.0 installed and want to install Version 2.1 in the same directory.

If you have previously installed **some** SOMobjects 2.1 components but now need to install other components, **go to step 9** below.

If you are installing SOMobjects 2.1 over an **earlier version** of Version 2.1, continue with step 6.

6. After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialogue box to appear with the following choices:

- ☒ Update the currently installed components
- ☐ Delete the currently installed components and re-install

The default is to update the currently installed components. Click on the check box of your choice, and then click on the *Continue* button.



7. The install program will ask you to make selections from the “Update” dialog box. The following selection options will be presented:

- ☒ Update AUTOEXEC.BAT
- ☒ Save a backup version?

The default is to update AUTOEXEC.BAT *and* to Save a backup version.

After making your selections, click on the *Update* button. This will begin the installation of selected components.

8. Go to **step 14** below.
9. If you have previously installed **some**, but not all, of the components available for SOMobjects Developer Toolkit, continue at this step:

After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialog box to appear with the following choices:

- ☐ Update the currently installed components
- ☐ Delete the currently installed components and re-install
- ☒ Install additional components

Select “Install additional components” and click on the *Continue* button.

10. The “Install” dialog box appears with the following options:

- ☒ Update AUTOEXEC.BAT
- ☐ Overwrite files

The default is to update AUTOEXEC.BAT and *not* to overwrite existing files.

After making your choices, click on *OK*.

The “Install — directories” dialog box is presented, specifying the SOMobjects base directory and a list of uninstalled components that can be additionally installed.

Please make your selections and then click on the *Install* button. This will begin the automatic process of component installation.

Go to **step 15** below.

11. If you do **not** have a previous version of SOMobjects 2.1 installed, or if you are installing SOMobjects 2.1 over SOMobjects 2.0, continue at this step:

After reading the text in the window, click on the *Continue* button. This causes the “Install” dialogue box to appear with the following choices:

- ☒ Update AUTOEXEC.BAT
- ☐ Overwrite files

The default is to update AUTOEXEC.BAT and *not* to overwrite existing files. Important: If you are installing Version 2.1 over 2.0, be sure to select the “Overwrite files” option.



You normally should update AUTOEXEC.BAT. This causes the appropriate paths and environment variables to be set. (Your old AUTOEXEC.BAT will be saved in AUTOEXEC.BAK.)

After making your choices, click on the *OK* button.

12. The next screen, entitled “Install — directories,” asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:
 - a. The SOM Kernel is required by all other components.
 - b. The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
 - c. The Utility Classes require the Interface Repository Framework.
13. After making your component selections, you can select a “base directory” in which to install the components. Your computer screen will display the default pathname for the base directory that the Toolkit uses. You can change the default, “C:\SOM”, to any <drive>:<path> you wish.
14. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic process of component installation.
 - If the components you wish to install require prerequisite components, the Installation Utility will ask if you want to install the prerequisites also. Click on the *Yes* button to continue installing the components you have selected and the prerequisite component(s). Or, click on the *No* button to return to the previous screen.
 - If there is insufficient space on the selected drive to install the SOMObjects component(s), you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.
15. The installation time will vary from machine to machine, but it is comparable to installation times for other products of similar size. An “Install — progress” window gives you feedback on the installation’s progress.

As installation progresses, the “Insert disk” dialog box will request you to insert another diskette, as required. After inserting the appropriate diskette, click on the *Continue* button.



The selected components will be installed in the base directory and the following subdirectories:

- `bin` — contains executable programs and DLLs
- `lib` — contains library files
- `include` — contains IDL files and some header files

Note: Most header files for the *include* directory must be generated using the batch files `somcorba.bat`, `somstars.bat`, or `somxh.bat`. Please refer to the `README.TXT` file for more information.

- `msg` — contains message files
- `etc` — contains miscellaneous files, including the default Interface Repository file (`som.ir`)
- `samples` — contains sample programs
- `tmp` — used by the SOM Compiler for temporary files

16. If you have selected the component “Utility Classes and TCP/IP Support”, a dialog box entitled “Configure TCPIP” will display. You can use the mouse to check the radio button that selects one of the options:

- ☐ IBM TCPIP
- ☐ FTP TCPIP
- ☐ NetManage TCPIP
- ☐ SunSelect TCPIP

Click on the *OK* button. This program will then copy the appropriate files required for your TCPIP Support.

17. After installation is complete, a dialog box entitled “Installation and Maintenance” will display. Click on the *OK* button.

18. Select *Exit* from the main “SOMobjects” window to exit the installation utility.

19. If you installed the SOMobjects Developer Toolkit onto a system that already contains another SOMobjects product and you did *not* install it into the same directory as the previously installed product, make sure that the environment variable `SOMBASE` in your `AUTOEXEC.BAT` file is set to the appropriate directory.

20. Before using the SOMobjects Developer Toolkit, read the `README.TXT` file in the base directory for important post-installation instructions and information.



Required Windows settings

Make sure your TEMP environment variable specifies a directory that can be used for temporary file storage.

If you select "Update AUTOEXEC.BAT" while running the SOMobjects setup program, SHARE is automatically appended to your AUTOEXEC.BAT file. Please ensure that your AUTOEXEC.BAT contains only one invocation of the following command:

SHARE

This starts the SHARE program, which installs file-sharing and locking capabilities on your disk and network drives. This is important when using the Interface Repository, DSOM, Persistence, or Replication frameworks. For more information, see your DOS/Windows documentation, or type HELP SHARE.



Installing SOMobjects Workstation Enabler from diskettes

If SOMobjects diskettes have not yet been created, first refer to the section “Creating SOMobjects Workstation Enabler installation diskettes from CD-ROM,” and perform the steps described there. Also see the earlier topic “How SOMobjects is packaged: Your installation options” to determine which SOMobjects Workstation Enabler components you will need.

To install the SOMobjects Workstation Enabler from diskettes, perform the following steps:

1. If DOS (version 5.x or 6.x) and Windows 3.1 are not already on the machine, install them.
2. If you will be using the Replication Framework, then install the appropriate network software. See the later main topic “Network Requirements for Windows.”
3. Insert the first Workstation Enabler diskette (SOMWSINST1) into the diskette drive.
4. Using the Run option of the Windows Program Manager, specify:

a:\setup

This invokes an installation utility having a standard Windows interface. In the main installation window, you will see a text window entitled “SOMobjects Workstation Enabler Installation” that contains information to help you continue with installation.

5. If you do **not** have a previous version of SOMobjects Workstation Enabler Version 2.1 installed, **go to step 11** below.
Important: Go to step 11 if you have the Workstation Enabler Version 2.0 installed and want to install Version 2.1 in the same directory.

If you have previously installed **some** SOMobjects Workstation Enabler Version 2.1 components but now need to install other components, **go to step 9** below.

If you are installing SOMobjects Workstation Enabler 2.1 over an **earlier version** of Version 2.1, continue with step 6.

6. After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialogue box to appear with the following choices:
 - ☒ Update the currently installed components
 - ☐ Delete the currently installed components and re-install

The default is to update the currently installed components. Click on the check box of your choice, and then click on the *Continue* button.



7. The install program will ask you to make selections from the “Update” dialog box. The following selection options will be presented:

- ☒ Update AUTOEXEC.BAT
- ☒ Save a backup version?

The default is to update AUTOEXEC.BAT *and* to Save a backup version.

After making your selections, click on the *Update* button. This will begin the installation of selected components.

8. Go to **step 14** below.

9. If you have previously installed **some**, but not all, of the components available for SOMobjects Workstation Enabler, continue at this step:

After reading text in the window, click on the *Continue* button. This causes the “Installation options” dialog box to appear with the following choices:

- ☐ Update the currently installed components
- ☐ Delete the currently installed components and re-install
- ☒ Install additional components

Select “Install additional components” and click on the *Continue* button.

10. The “Install” dialog box appears with the following options:

- ☒ Update AUTOEXEC.BAT
- ☐ Overwrite files

The default is to update AUTOEXEC.BAT and *not* to overwrite existing files.

After making your choice, click on *OK*.

The “Install — directories” dialog box is presented, specifying the SOMobjects base directory and a list of uninstalled components that can be additionally installed.

Please make your selections and then click on the *Install* button. This will begin the automatic process of component installation.

Go to **step 15** below.

11. If you do **not** have a previous version of SOMobjects Workstation Enabler 2.1 installed, or if you are installing SOMobjects Workstation Enabler 2.1 over Version 2.0, continue at this step:

After reading the text in the window, click on the *Continue* button. This causes the “Install” dialogue box to appear with the following choices:

- ☒ Update AUTOEXEC.BAT
- ☐ Overwrite files

The default is to update AUTOEXEC.BAT and *not* to overwrite existing files. Important: If you are installing Version 2.1 over 2.0, be sure to select the “Overwrite files” option.



You normally should update AUTOEXEC.BAT. This causes the appropriate paths and environment variables to be set. (Your old AUTOEXEC.BAT will be saved in AUTOEXEC.BAK.)

After making your choices, click on the *OK* button.

12. The next screen, entitled “Install — directories,” asks you which components to install and where to install them. At the top of the screen is the list of components. Click once on each component you wish installed. If you are using a keyboard, use the up and down arrow keys to move the cursor to the desired component; the *spacebar* is used to select a component. Again, any component can be separately installed, provided that the following prerequisites are satisfied:
 - a. The SOM Kernel is required by all other components.
 - b. The Persistence Framework, the Replication Framework, and Distributed SOM (DSOM) require the Utility Classes.
 - c. The Utility Classes require the Interface Repository Framework.
13. After making your component selections, you can select a “base directory” in which to install the components. Your computer screen will display the default pathname for the base directory that the Toolkit uses. You can change the default, “C : \SOM”, to any <drive>:<path> you wish.
14. When you have selected the components to install and have chosen an appropriate base directory, click on the *Install* button. This will begin the automatic install process.
 - If the components you wish to install require prerequisite components, the Installation Utility will ask if you want to install the prerequisites also. Click on the *Yes* button to continue installing the components you have selected and the prerequisite component(s). Or, click on the *No* button to return to the previous screen.
 - If there is insufficient space on the selected drive to install the SOMobjects component(s), you will receive a warning message. You should clear sufficient space on the drive or select another drive before continuing.
15. The installation time will vary from machine to machine, but is comparable to installation times for other products of similar size. An “Install — progress” window gives you feedback on the installation’s progress.

As installation progresses, the “Insert disk” dialog box will request you to insert another diskette, as required. After inserting the appropriate diskette, click on the *Continue* button.



The selected components will be installed in the base directory and the following subdirectories:

- `bin` — contains executable programs and DLLs
- `lib` — contains library files
- `msg` — contains message files
- `etc` — contains miscellaneous files, including the default Interface Repository file (`som.ir`)

16. If you have selected the component “Utility Classes,” a dialog box entitled “Configure TCPIP” will display. You can use the mouse to check the radio button that selects one of the options:

- ☐ IBM TCPIP
- ☐ FTP TCPIP
- ☐ NetManage TCPIP
- ☐ SunSelect TCPIP

Click on the *OK* button. This program will then copy the appropriate files required for your TCPIP Support.

17. After installation is complete, a dialog box entitled “Installation and Maintenance” will display. Click on the *OK* button.

18. Select *Exit* from the main “SOMobjects” window to exit the installation utility.

19. If you installed the SOMobjects Workstation Enabler onto a system that already contains another SOMobjects product and you did *not* install it into the same directory as the previously installed product, make sure that the environment variable `SOMBASE` in your `AUTOEXEC.BAT` file is set to the appropriate directory.

20. Before using the SOMobjects Workstation Enabler, read the `README.TXT` file in the base directory for important post-installation instructions and information.

Required Windows settings

Make sure your `TEMP` environment variable specifies a directory that can be used for temporary file storage.

If you select “Update `AUTOEXEC.BAT`” while running the SOMobjects setup program, `SHARE` is automatically appended to your `AUTOEXEC.BAT` file. Please ensure that your `AUTOEXEC.BAT` contains only one invocation of the following command:

`SHARE`

This starts the `SHARE` program, which installs file-sharing and locking capabilities on your disk and network drives. This is important when using the Interface Repository, `DSOM`, Persistence, or Replication frameworks. For more information, see your DOS/Windows documentation, or type `HELP SHARE`.



Network Requirements for Windows

Networking support is required by several frameworks of SOMobjects for Windows, as follows:

- Replication Framework (requires networking support in the Developer Toolkit, Workstation Enabler, and Workgroup Enabler)
- Event Management Framework (in the Workgroup Enabler only)
- Distributed SOM (DSOM) Framework (in the Workgroup Enabler only)

If you are using any of the above frameworks that require networking support, then before you can use SOMobjects with your application:

- The supported networking product software must be installed and configured on each machine, according to the instructions accompanying the products(s).
- The network itself must be configured, which includes assigning a *network address* and *hostname* to each machine. (Machines on the network are referred to as *hosts* or *nodes*).

When using the SOMobjects Workgroup Enabler, these additional considerations apply:

- If you are using the Replication Framework, a network file system must also be installed for its operation.
- If you are using Distributed SOM, the DSOM configuration data files may be stored on a network file system for ease of maintenance, although this is optional.

Networking software requirements

On DOS/Windows, the following network software product is supported with the SOMobjects Developer Toolkit and SOMobjects Workstation Enabler:

- TCP/IP, which is supported on the following platforms:
 - IBM TCP/IP for DOS/Windows, Version 2.1, from IBM Corporation,
 - Chameleon/Newt for MS Windows, Version 4.0, from NetManage Inc.
 - PC/TCP Kernel Software for DOS/Windows, Version 2.3, from FTP Software Inc.,
 - PC-NFS, Version 4.0, from SunSelect.

It is strongly recommended that you upgrade to the newer versions of these products.



Configuring your network

As part of network configuration, an address or a hostname must be assigned to each machine. This procedure is usually quite different for each network platform.

To facilitate the portability of the SOMobjects for Windows and its applications to a variety of network platforms, a uniform communications model and network addressing scheme is used. It is based on the well-known *sockets interface*, *Internet addresses*, and *hostnames* used with TCP/IP.

Choosing an IP address and hostname

IP Addresses

Each machine that uses SOMobjects network support must have a unique network address. The SOMobjects frameworks use a TCP/IP-style addressing scheme to identify hosts on the network. This scheme uses 32-bit Internet addresses (also known as “IP addresses”), and a “hosts” file for resolving symbolic hostnames to their network addresses. For uniformity, the SOMobjects frameworks always expect IP addresses to be used. For those protocols that do not normally use IP addresses to identify machines (such as NetBIOS and NetWare), the SOMobjects Workgroup Enabler provides runtime support for translating IP addresses into the “native” addresses of the underlying protocol.

IP addresses are 32-bit integers that uniquely identify a host in a network. For convenience, the 32-bit IP address is usually expressed in four-part dotted-decimal form. For example:

```
129.35.64.7
1. 1. 1. 1
200.001.001.255
```

Each of the four numbers represents the value of one 8-bit quantity in the 32-bit address.

If a machine is connected to multiple networks, it may have multiple IP addresses. Usually, each LAN adaptor used to connect to a different network will be configured with a unique address.

It is essential that each host's IP addresses must be unique. (That is, for each IP address assigned to a host, no other host can have that address.)

Hostnames

Each machine that uses SOMobjects network support is also assigned a unique hostname, and zero or more aliases. Hostnames are simple strings of alphanumeric characters, underscores hyphens (–), and periods (.). For example:

```
server1
my-machine.austin.ibm.com
```



“Hosts” files

The association between hostnames and IP addresses is maintained in a “hosts” file or database. The “hosts” file may be stored on each machine, or if the network supports it, in a shared file. When a SOMobjects application uses a symbolic hostname to refer to a destination machine, the networking software resolves the symbolic name to an IP address by querying the “hosts” file or name service.

Each line of the “hosts” file takes the following format:

IPAddress hostname [alias(es)] [# comment]

The following example illustrates a “hosts” file that contains entries for three machines on a network.

```
129.5.24.1 host1 localhost    # DSOM requires a
                                # localhost alias
129.5.24.3 host3 joe codeserver # Joe's machine
129.5.24.4 host4.austin.ibm.com
```

In this example, the *hostname* “host3” or the aliases “joe” or “codeserver” would be resolved by the networking software to the IP address of 129.5.24.3.

Also in this example, “host4.austin.ibm.com” is considered to be fully qualified hostname.

Important: Some of the DSOM commands and samples assume that a *hostname* “localhost” has been associated with the address assigned to the local machine. The “localhost” *hostname* can be defined as an alias, as shown above for IP address 129.5.24.1

Important: Certain TCP/IP implementations require a fully qualified *hostname*. Please refer to Option C for details on the specifics for a particular TCP/IP network.

Important: The “hosts” file should be stored in a directory specified by the ETC environment variable. **Note:** Certain TCP/IP implementations require the “hosts” file to be present in the current directory from which an application is run.



Configuration of TCP/IP Networking

This section explains how to configure TCP/IP for use with SOMobjects for Windows applications. Currently, SOMobjects supports the following TCP/IP implementations:

- IBM's TCP/IP for DOS/Windows
- FTP Software's PC/TCP Kernel Software for DOS/Windows
- NetManage's Chameleon/Newt for MS Windows
- SunSelect's PC-NFS

The following steps apply to all TCP/IP implementations unless specified otherwise.

Note: Refer to the README.TCP file in the ETC directory for information available after the publication of this document.

Step 1 — Choosing IP addresses and hostnames

For each machine that uses TCP/IP with SOMobjects for Windows, choose a unique IP address and hostname.

Step 2 — Installing and configuring TCP/IP

Install the TCP/IP implementation of your choice according to the directions for that product. Perform the configuration steps provided, taking care to note the location of the "hosts" file or "hosts table." This directory will be referred to in subsequent steps as the HOSTTABLEDIR.

If you have already installed and configured the product, make note of the HOSTTABLEDIR.

If the configuration of your product does not provide for a "hosts table" or "hosts" file, select a directory on your PC as the HOSTTABLEDIR.

Step 3 — Installing SOMobjects TCP/IP support

TCP/IP will be installed along with SOMobjects for Windows when you select the appropriate TCP/IP component of SOMobjects.

Note: As part of the installation of TCP/IP support, the files README.TCP and CONFIG.TCP are copied to the %SOMBASE%\BIN directory. CONFIG.TCP is a text file that indicates which vendor's TCP/IP support was installed.



Step 4 — Setting environment variables

The SOMobjects TCP/IP support requires that you set the following environment variables in AUTOEXEC.BAT:

- HOSTNAME — the symbolic name assigned to this host, and
- HOSTADDR — the dotted-decimal IP address of this host.

An entry corresponding to this HOSTNAME and HOSTADDR should appear in the “hosts” file located in the HOSTTABLEDIR.

- ETC — the complete pathname for the HOSTTABLEDIR
(for example: C:\TCPDOS\ETC, C:\NETMANAG, C:\NFS, or C:\PCTCP).

Step 5 — Configuring SOMobjects TCP/IP support

Add an entry to the “hosts” file for each machine that will be using SOMobjects for Windows.

Important: Different vendors have different requirements for “hosts” files and host names, as follows:

IBM’s TCP/IP for DOS/Windows

The “hostname” *may* be fully qualified.

The “hosts” file should be in the %ETC% directory specified by the ETC environment variable.

FTP Software’s PC/TCP

The “hostname” *may* be fully qualified.

The “hosts” file should be in the %ETC% directory specified in the “pctcp.ini” file.

For information on the “pctcp.ini” file, please consult your FTP PC/TCP documentation.

NetManage’s Chameleon/Newt for MS Windows

The “hostname” *must* be fully qualified.

The “hosts” file should be in the “current” directory from which an application is run.

SunSelect’s PC-NFS

The “hostname” *may* be fully qualified.

The “hosts” file should be in the “PCNFS” directory in which PC-NFS was installed.



SOMobjects Icon Group

SOMobjects for Windows provides an icon group for the executables in SOM and DSOM. Under the Windows Program Manager, this icon group is identified by the icon labeled “SOM”. After opening it, you will see icons for the following executables, depending on which components you select:

IRDump	if you select the Interface Repository component
Register Impls	if you select the Distributed SOM component
DSOM Daemon	if you select the Distributed SOM component
SOMDCHK	if you select the Distributed SOM component
MPTN Start	if you select NetBIOS support
README	

Double-clicking on an icon will execute it. The IRDump is a sample SOMobjects program. The purposes of Register Impls and the DSOM Daemon are described in the DSOM chapter of the *SOMobjects Developer Toolkit Users Guide*. The MPTN icon is used in connection with NetBIOS network support.

Cleanup for Failed Windows Programs

SOMobjects for Windows includes a utility program, SOMEND, that programmers can use to clean up after a Windows program that has terminated abnormally, such as may occur during development of programs that use SOMobjects classes. SOMEND runs like a Windows program itself, and it can be specified from the Windows Program Manager as follows:

- Open the SOM icon group and double-click on the **SOMEND** icon, –or–
- From the **File** menu, select **Run**, and then in the filename box, enter: **SOMEND**

The resulting execution of SOMEND will release all SOM resources belonging to the failed program. Caution: Failure to run SOMEND after the abnormal termination of a SOMobjects program may mean that any subsequent SOMobjects program will also fail.





4. PostScript Files for SOMobjects Manuals

Your SOMobjects CD-ROM or IBM-supplied SOMobjects diskettes contain PostScript files from which you can print all manuals in the SOMobjects documentation set. These manuals have exactly the same content as the online SOMobjects Publications, formatted for 8.5" x 11" hardcopy output.

Content of each PostScript file

The title of each SOMobjects manual is listed below, along with its corresponding PostScript files and the content of each file, by chapter or major grouping:

SOMobjects Developer Toolkit Users Guide

<i>PostScript files</i>	<i>Chapter content</i>
user1.ps	Table of contents, 1. Introduction, 2. Tutorial, 3. Using SOM Classes in Client Programs
user2.ps	4. SOM IDL and SOM Compiler, 5. Implementing Classes in SOM
user3.ps	6. DSOM Framework
user4.ps	7. Interface Repository Framework 8. Persistence Framework
user5.ps	9. Replication Framework, 10. Metaclass Framework 11. Collection Classes, 12. Event Management Framework
user6.ps	All Appendices, Glossary, Index

SOMobjects Developer Toolkit Programmers Reference Manual

<i>PostScript files</i>	<i>Content</i>
ref1.ps	Table of contents, SOM Kernel reference
ref2.ps	DSOM reference
ref3.ps	Interface Repository and Persistence reference
ref4.ps	Replication, Metaclass, and Event Management reference, Index



SOMobjects Developer Toolkit Quick Reference Guide

<i>PostScript files</i>	<i>Content</i>
qref.ps	Quick reference for SOM Compiler, SOM Kernel, all SOMobjects frameworks, and Collection Classes

SOMobjects Developer Toolkit Collection Classes Reference Manual

<i>PostScript files</i>	<i>Content</i>
ccref1.ps	Table of contents, somf_MCollectible class through somf_TDequeLinkable class
ccref2.ps	somf_TDictionary class through somf_TPriorityQueueIterator class
ccref3.ps	somf_TSequence class through somf_TSortedSequenceNode class, Index

SOMobjects Developer Toolkit Emitter Framework Guide and Reference

<i>PostScript files</i>	<i>Content</i>
emit1.ps	Table of contents, Emitter guide
emit2.ps	Emitter reference, Index

Printing the PostScript files

These PostScript files are designed to print either single-sided or double-sided, if your printer has that capability.

OS/2 or Windows users can print these files directly, using the print command normally used for PostScript files on your system.

For AIX users, a normal print command is similarly issued for PostScript files placed on your hard drive by an installation utility. However, special steps are required *before printing* (a) for PostScript files created on backup diskettes by **sominst** or (b) for PostScript diskettes obtained from IBM as alternate media. First, you must restore the diskette files to a directory on your hard disk. You will need a minimum of 15M available for this. Proceed as follows:

1. Create a directory on your hard disk to contain the restored files.
2. Perform a "cd" to make this the current directory.
3. Enter the command "restore". The restore program will tell you when to insert the diskettes.

After the restore program completes, the directory will contain the PostScript files. You can then print them as you would any PostScript file.



5. Installation Support for SOMobjects Applications

If you will be creating applications that package and ship the SOMobjects Workstation Enabler run time, it is essential that you pay particular attention to how and where you install the SOMobjects run-time components for your applications. This is necessary for three reasons:

- It is possible that other SOMobjects applications that use the SOMobjects Workstation Enabler run-time components have already been installed on the same system. In addition,
- The OS/2 2.x and 3.x operating systems include SOMobjects run-time components, and also
- The AIX 4.1.x operating systems include SOMobjects run-time components.

Thus, installation programs that include SOMobjects Workstation Enabler run-time components must follow the rules described below. Otherwise, it is possible that a down-level version of the run time could be installed and potentially cause SOMobjects application programs to stop working.

The following topics provide instructions for application builders on the different operating systems on which SOMobjects applications can run.

AIX applications

On AIX, version control is handled by the **installp** program and install images. A SOMobjects application on AIX should not include any of the SOMobjects run-time files as part of the application's install image. Instead, the SOM application install should use the **installp** program with the SOMobjects Workstation Enabler install image that is contained on the CD-ROM for the SOMobjects Developer Toolkit.

AIX 3.2.x systems do *not* contain the SOMobjects Workstation Enabler run-time files with the operating system. SOM application installations must install the SOMobjects Workstation Enabler using the **installp** program. This install image is located in the file “\aix.32\somws.obj” on the CD-ROM.

AIX 4.1.x systems *do* contain a version of the SOMobjects Workstation Enabler run-time files that are at an earlier version than those contained in the current SOMobjects Developer Toolkit. In order to use the later version of the SOMobjects Workstation Enabler on AIX 4.1.x systems, a SOM application's installation on AIX 4.1.x must also install the SOMobjects Workstation Enabler that is contained on the CD-ROM for the SOMobjects Developer Toolkit, Version 2.1. This install image is located in the file “\aix.41\somws.obj” on the CD-ROM.



The SOMobjects application's installation can select individual SOM components or the entire SOMobjects Workstation Enabler. The command to install the SOMobjects Workstation Enabler run-time files is as follows:

installp -gad <install_image> <component>

where:

<install_image> is **\aix.32\somws.obj** or **\aix.41\somws.obj**

<component> is one of the following:

all	Installs all components
som.somk	SOM Run-time Kernel
som.somi	Interface Repository Framework
som.somd	Distributed SOM Framework (DSOM)
som.somp	SOMobjects Persistence Framework
som.somr	SOMobjects Replication Framework
som.somu	SOMobjects Utility Classes
som.somuc	SOMobjects Collection Classes

OS/2 applications

Particular care must be used when installing a version of the SOMobjects Workstation Enabler run times on an OS/2 system, because the operating system includes versions of the SOMobjects run time. OS/2 2.x includes SOMobjects Version 1.0, and OS/2 Warp includes SOMobjects Version 2.1.

To package and install a version of the SOMobjects Workstation Enabler run time for OS/2, the following rule must be followed: The SOMobjects run time must be loaded from only one place on the system, and that place is the OS2 subdirectory of the boot drive.

The SOMobjects installation programs also follow this basic rule. Thus, if any SOMobjects product is installed after an application has previously installed the Workstation Enabler run time, the new installation will not down-level the system.

The SOMobjects Developer Toolkit includes a program named **somsetup.exe** that an application's install program can run to install the SOMobjects Workstation Enabler run time. This program has the following syntax:

somsetup <source_dir> <target_dir> <syslevel_file> <update_switch>

where:

<source_dir> is the name of the base directory containing the SOMobjects Workstation Enabler run time. This directory is assumed to have subdirectories like the Workstation Enabler (such as, bin, lib, msg and install). For example: C:\SOM.



<target_dir> is the name of the base directory to which the run-time files will be installed. This should always be the OS2 subdirectory of the boot drive. For example: C:\OS2. Note: If you set **<target_dir>** to “*”, **somsetup** will determine the OS/2 directory for you.

<syslevel_file> is the name of a syslevel file contained in the directory **<source_dir>\install**. The named syslevel file determines which run-time files are copied. The path to the file should *not* be included. The syslevel file you specify must be one of the following:

syslevel.sct	SOMobjects collection and base socket classes used by other SOM frameworks
syslevel.sds	Distributed SOM framework
syslevel.sem	Event Manager framework
syslevel.sir	Interface Repository framework
syslevel.spf	Persistence framework
syslevel.srf	Replication framework
syslevel.srk	Basic SOM kernel run time
syslevel.suc	Collection classes
syslevel.sut	SOM utilities and metaclasses

<update_switch> is either 0 or 1. Setting it to 1 means that “config.sys” will be updated. You should set this option to 1 for *only one* of the components that you install.

The following example illustrates how the **somsetup** program would be called to install the SOM kernel and Interface Repository, assuming that the SOMobjects run times are in c:\som and that OS/2 is installed in c:\os2:

```
somsetup c:\som c:\os2 syslevel.srk 1
somsetup c:\som c:\os2 syslevel.sir 0
```

Note: If **<source_dir>** and **<target_dir>** are set to the same value, the program does nothing.

Syslevel files are used to maintain version control information. You can use the SYSCHECK.EXE program to display the contents of the syslevel files. When running it, specify the name of the syslevel file as the only argument to this program.

Windows applications

Since SOMobjects is not supplied in the Windows operating system, a base reference point is needed for every application that installs the SOMobjects Workstation Enabler run time. On the Windows system, this is determined from the value of the SOMRUNTIME environment variable.



To package and install a version of the SOMobjects Workstation Enabler run time for Windows, you must adhere to the following rule:

The SOMobjects Workstation Enabler run time must be loaded from only one place on the system, and that place is the directory pointed to by SOMRUNTIME. If the SOMRUNTIME environment variable has not previously been set, the location of the run time is at the discretion of the install program. However, SOMRUNTIME must be set to the installed directory following the installation.

The SOMobjects installation programs also follow this basic rule. Thus, if any SOMobjects product is installed after an application has previously installed the Workstation Enabler run time, the new installation will not down-level the system.

The SOMobjects Developer Toolkit includes a program named **somsetup.exe** that an application's install program can run to install the SOMobjects Workstation Enabler run time. Also available is a Windows version of the same program, named **winsetup.exe**. The **somsetup** program has the following syntax:

somsetup <source_dir> <target_dir> <syslevel_file> <update_switch>

where:

<source_dir> is the name of the base directory containing the SOMobjects Workstation Enabler run time.

<target_dir> is the name of the base directory to which the run-time files will be installed. Note: If you set <target_dir> to "*", **somsetup** will copy the run-time component to the directory named by SOMRUNTIME. However, if "*" is used and SOMRUNTIME has not been set, the program does nothing.

<syslevel_file> is the name of a syslevel file contained in the directory <source_dir>\install. The named syslevel file determines which run-time files are copied. The path to the file should *not* be included. The syslevel file you specify must be one of the following:

syslevel.sct	SOMobjects collection and base socket classes used by other SOM frameworks
syslevel.sds	Distributed SOM framework
syslevel.sem	Event Manager framework
syslevel.sir	Interface Repository framework
syslevel.spf	Persistence framework
syslevel.srf	Replication framework
syslevel.srk	Basic SOM kernel run time
syslevel.suc	Collection classes
syslevel.sut	SOM utilities and metaclasses

<update_switch> is either 0 or 1. Setting it to 1 means that "autoexec.bat" will be updated. You should set this option to 1 for *only one* of the components that you install.



The following example illustrates how the **somsetup** program would be called to install the SOM kernel and Interface Repository, assuming that the SOMObjects run times are in c:\som and that the SOMRUNTIME environment variable has already been set:

```
somsetup c:\som * syslevel.srk 1  
somsetup c:\som * syslevel.sir 0
```

Note: If *<source_dir>* and *<target_dir>* are set to the same value, the program does nothing.

Syslevel files are used to maintain version control information. You can use the SYSCHECK.EXE program to display the contents of the syslevel files. When running it, specify the name of the syslevel file as the only argument to this program.





6. Service and Technical Support for SOMobjects

This service and technical support information applies for:

- **SOMobjects Developer Toolkit, Version 2.1**
- **SOMobjects Workstation Enabler, Version 2.1**
- **SOMobjects Workgroup Enabler, Version 2.1**

Note: Customers in European, Middle Eastern, and African Countries should refer to the separate Service Statement included with the product for service and technical support instructions for this product.

Customers in Canada and Asia Pacific Countries should refer to the Service Statement in the License Information Booklet for service and technical support instructions for this product.

You Must Register for Service

Defect service for this product is available through April 30, 1996, or six months after the general availability of a subsequent version of the product (or a product designated as a replacement product), whichever occurs earlier.

Register by providing your company name, address, phone number, Internet address (if applicable), contact person's name, phone and FAX numbers (include area code). This information can be sent via electronic mail as follows:

- IBM OS2BBS to userid: **WZ00178**

or

- Internet Commercial: **somreg@austin.ibm.com**

or

- CompuServe: **GO IBMSOM**

and then browse the News Flash for further registration information.

Within two working days of receipt of your registration, a service ID or password will be issued to you, allowing access to the defect forum and technical support forum.

Defect Support

Defect service for this product is available through April 30, 1996, or six months after the general availability of a subsequent version of the product (or a product designated as a replacement product), whichever occurs earlier.

Defect service is provided by the IBM SOMobjects Development personnel via the following Electronic Support Services:

- IBM OS/2 Bulletin Board System
via IBM TalkLink Electronic Conferencing Service



- Internet Commercial Electronic Network
- CompuServe

The IBM SOMobjects Development personnel will monitor these Electronic Support Services between 9 a.m. and 6 p.m. CT, Monday through Friday, except holidays. Acknowledgement of receipt of Defect Report will be within 24 hours for SOMobjects RUNTIME defects and 72 hours for SOMobjects TOOLKIT defects, provided that the Defect Report is received by the SOMobjects Technical Support personnel during the time period of 9 a.m. to 6 p.m. CT, Monday through Friday.

Technical Support

Technical support service for this product is available for ninety (90) days after receipt of your service registration by SOMobjects Development personnel or until expiration of defect support, whichever occurs first.

Technical support service is provided by the IBM SOMobjects Development personnel via the following Electronic Support Services:

- IBM OS/2 Bulletin Board System
via IBM TalkLink Electronic Conferencing Service
- Internet Commercial Electronic Network
- CompuServe

The IBM SOMobjects Development personnel will monitor these Electronic Support Services between 9 a.m. and 6 p.m. CT, Monday through Friday, except holidays. Questions will be answered in the order in which they are received. Extension of the technical support beyond the expiration date will be offered on a fee basis. Information regarding this offering will be provided on the service bulletin boards.

IBM OS/2 Bulletin Board System via TalkLink

The OS/2 Bulletin Board System (BBS) is implemented on the IBMLink facility. The OS/2 BBS is provided to all Workgroup Technical Coordinators (WTSC) in corporate IBMLink accounts and all members of the OS/2 Developer's Assistance Program (DAP) who have access to IBMLink. You may contact your Technical Coordinator, if one has been identified by your company. If your company does not currently utilize IBMLink, you can subscribe to TalkLink by calling 1-800-547-1283 (USA).

How to use the IBM OS/2 Bulletin Board System (OS2BBS) via TalkLink for service and support for SOMobjects:

- To obtain **technical support** for non-defect "how-to" questions and answers:
 - Logon to IBM OS2BBS system from IBMLink Main Menu screen
 - Select "OS/2 Questions and Answer Bulletin Boards"
 - Select "SOMHOWTO" CFORUM



- To submit a suspected **defect report**:
 - Logon to IBM OS2BBS system from IBMLink Main Menu screen
 - Select “OS/2 Questions and Answer Bulletin Boards”
 - Select “SOMTKBUG” – if the suspected defect is with the SOM Toolkit
 - Select “SOMRTBUG” – if the suspected defect is with the SOM Runtime

Note: When submitting a suspected defect report, please provide the following information:

- Your Company name and address.
- Your name, phone and FAX numbers.
- The hardware platform –
(PS/2 Model ____, or RS/6000 Model ____, or other____).
- Operating System and level –
(OS/2 Version ____, AIX Version ____, or DOS/Windows Version____).
- System configuration (memory, communication protocol, etc.).
- SOMobjects Version ____ (and CSD level ____, if applicable).
- Complete description of the problem
- Complete test case to reproduce the problem, if applicable (with a minimum amount of code/data).

Internet Commercial Electronic Network

How to use Internet for service and support for SOMobjects:

- To obtain **technical support** for non-defect “how-to” questions and answers:
 - Via USENET Newsgroup at: **comp.unix.aix**
Note: Include the word “SOM” in the subject line.
- To submit a suspected **defect report**:
 - Send EMAIL to: **sombug@austin.ibm.com**

Note: When submitting a suspected defect report, please provide the following information:

- Your Company name and address.
- Your name, phone and FAX numbers.
- Your Internet address.
- The hardware platform –
(PS/2 Model ____, or RS/6000 Model ____, or other____).
- Operating System and level –
(OS/2 Version ____, AIX Version ____, or DOS/Windows Version____).
- System configuration (memory, communication protocol, etc.).
- SOMobjects Version ____ (and CSD level ____, if applicable).
- Complete description of the problem.
- Complete test case to reproduce the problem, if applicable (with a minimum amount of code/data).



CompuServe

How to use CompuServe for service and support for SOMobjects:

- From any CompuServe prompt, enter: **GO IBMSOM**

Note: When submitting a suspected defect report, please provide the following information:

- Your Company name and address.
- Your name, phone and FAX numbers.
- The hardware platform –
(PS/2 Model ____, or RS/6000 Model ____, or other ____).
- Operating System and level –
(OS/2 Version ____, AIX Version ____, or DOS/Windows Version ____).
- System configuration (memory, communication protocol, etc.).
- SOMobjects Version ____ (and CSD level ____, if applicable).
- Complete description of the problem.
- Complete test case to reproduce the problem, if applicable (with a minimum amount of code/data).

If you are not currently a member of CompuServe, you can subscribe by calling (USA) 1-800-524-3388 and asking for Representative 239.



A. Mounting a CD-ROM Drive

This appendix is useful if you want to install from a SOMobjects CD-ROM onto the AIX operating system. It explains how to:

- Load a CD-ROM
- Check whether the CD-ROM drive is mounted
- Mount the CD-ROM drive, if needed

You can install from a CD-ROM drive on your local system or from a remote system. If the CD-ROM drive is not mounted, you must login as “root” to mount it.

Note: The sample commands in this appendix show the default device name, /dev/cd0, for a CD-ROM drive. Device names can be different on your system. If you encounter problems, check your hardware reference manuals or ask your system administrator.

Loading the CD-ROM into the drive

If your CD-ROM drive uses a caddy (a plastic case that holds the disk in the drive), put the CD-ROM in a caddy and insert the caddy into the drive. If your CD-ROM drive does not use a caddy, load the disc directly into the drive. Load the disc so the printed side is facing up. For detailed instructions, see your CD-ROM hardware manual.

Important: If your CD-ROM drive requires a caddy and the disc is not in a caddy when you put it into the CD-ROM drive, both the disc and the drive can be damaged.

Checking for a /cdrom directory

Normally, the CD-ROM is mounted to the /cdrom directory. Check for this directory on your system.

If you do not find a /cdrom directory, go to “Mounting the CD-ROM drive on a local system” on page 114 or to “Mounting the CD-ROM drive from a remote system” on page 115.

If you do find a /cdrom directory, check whether the CD-ROM is mounted, as described in the following topic.

Checking whether the CD-ROM drive is mounted

If the CD-ROM drive is not mounted, you will have to mount it before you can install the files. Determine if the drive is already mounted, by entering:

```
/etc/mount
```



You should see a list of mounted file systems. The CD-ROM drive has already been mounted on your local system if you see a line similar to this:

```
/dev/cd0 on /cdrom
```

Note: In the mount table, CDRom appears in the “Mounted Over” column for this device.

The CD-ROM drive has been mounted from a remote system if a line similar to the following one appears in the list of mounted file systems (where *host* is the host name of the remote system):

```
host:/cdrom on /cdrom
```

If the drive is *not* mounted, see the next topic, “Mounting the CD-ROM drive on a local system,” or see “Mounting the CD-ROM drive from a remote system” on page 115, as appropriate at your site.

If the CD-ROM drive is mounted, you are ready to continue with installation of the SOMobjects Developer Toolkit or the SOMobjects Workstation Enabler, as described earlier in this installation guide.

Mounting the CD-ROM drive on a local system

To mount a CD-ROM drive, you must know your AIX system’s “root” password. If you do not know the password, contact your system administrator.

To mount the drive on a local system:

1. Become “root” by entering:

```
su
```

The system will request the root password.

2. Enter:

```
mkdir /cdrom
```

3. Enter the mount command for your system:

```
/etc/mount -v 'cdrfs' -r '' /dev/cd0 /cdrom
```

The “-r” option means that the drive is mounted as read-only. Use this option to prevent media error messages from appearing.

4. Verify that the drive was mounted correctly by entering:

```
/etc/mount
```

You should see a list of mounted file systems, including the name of the drive you just mounted.



5. To exit from “root”, enter:

```
exit
```

You are no longer logged in as root. Now, you are ready to continue with installation of the SOMobjects Developer Toolkit or the SOMobjects Workstation Enabler, as described earlier in this installation guide.

Mounting the CD-ROM drive from a remote system

If the CD-ROM drive is attached to a remote system, first check whether it is listed in the “exports” file on the remote system, and add it if necessary. The exports file specifies directories that can be exported to local systems.

After checking the exports file and correcting it if necessary, you can mount the CD-ROM drive. The following topics explain each of those steps.

Checking the exports file

The remote CD-ROM drive must be listed in the exports file before it can be mounted. To check this file:

1. Login to the remote system as “root”.
2. Change to the appropriate directory:

```
cd /etc
```

3. List the exports file:

```
ls exports
```

If you do not see the file listed, create the file and edit it as described in “Editing the exports file,” next.

4. Check the contents of the exports file for the following line:

```
/cdrom -ro
```

If you see this line, skip to “Mounting the CD-ROM” on page 116. If not, you need to add this line to the file. For instructions, see “Editing the exports file,” next.

Editing the exports file

Using any text editor, edit the exports file by adding the following line as the last line of the file:

```
/cdrom -ro
```

If the file does not exist, create it and add the preceding line.

To load the exports file, enter the following load command:

```
/usr/etc/exportfs -a
```



Mounting the CD-ROM

Follow these steps to mount the CD-ROM:

1. On the remote system, type the “mount” command:

```
/etc/mount -v 'cdrfs' -z '' /dev/cd0 /cdrom
```

The “-v” option specifies the CD-ROM type.

2. Exit root on the remote system by entering:

```
exit
```

3. Login as “root” on your local system.

The system will request you to type the “root” password.

4. Enter:

```
/etc/mount host:/cdrom /cdrom
```

where *host* is the name of the remote system.

5. Exit by entering:

```
exit
```

You are no longer logged in as root. Now, you are ready to continue with installation of the SOMobjects Developer Toolkit or the SOMobjects Workstation Enabler, as described earlier in this Installation Guide.