SPSD/M 

Installation Guide

This guide describes how to install SPSD/M onto your PC using the supplied installation CD-ROM. It also includes information on configuring your operating system for running SPSM, and a listing of the installation kit contents.

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Introduction

This guide gives instruction for installing the SPSD/M on your system. The SPSD/M program and database files are stored in a compressed format on the CD-ROM. This means that the files are decompressed as part of the installation process.

Please read the entire Installation Guide and follow the instructions that apply to your system and the version of the model that you wish to install. When you have finished installing SPSD/M, we recommend that you read the *Introduction and Overview Guide*.

LICENSING AGREEMENT

Please ensure that you have read and understood your license agreement. Once you install and work with the model you must abide by its terms. The major points of your license agreement can be summarized as follows:[1]

Statistics Canada retains ownership of the SPSD/M. You have been licensed only to use it.

The number of installations of SPSD/M that may be active at any given time is specified in your license agreement.

Any published results must contain a special publication notice specified in the license agreement.

While running the installation program, the program will display licensing information and will ensure that licensing information has not been tampered with in the installation kit. Once the licensing information is set by the Analytical Studies Branch of Statistics Canada it can only be changed by issuing a new license agreement and a new installation kit. **It is absolutely imperative that you not tamper with this disk for the system to function properly.**

INFORMATION REQUIRED PRIOR TO INSTALLATION

Before attempting to install the SPSD/M, it is necessary that you should understand the concepts of tree-structured directories, path names, and environment variables. It is also useful to know some facts about configuring your operating system. The *Introduction and Overview Guide* contains a short exposition on these topics.

If you are a user of a previous version of SPSD/M, **please refer to Appendix A: Installation Notes for Established Users, for important information on the installation procedure.** You may be required to perform a number of actions before installing this release of the model.

Hardware/Software Requirements

[1] Please note that the terms of the licence agreement are only summarized here: the licence agreement itself remains the definitive statement of your rights and obligations.

SUMMARY

In order to run the SPSD/M on your computer it must have the following configuration:

Microcomputer:	Windows 95/98 or NT compatible.
CD-ROM Drive:	CD-ROM, 1 fixed disk (hard drive) with 20 mb free for full model.
"Glass Box":	Visual C++ is needed

The following sections describe in detail the hardware requirements of the SPSD/M.

MICROCOMPUTER

The executable programs that come with SPSD/M will perform correctly on a Windows 95/98 or NT compatible machine. The computer's processor should be at least a Pentium class processor.

STORAGE

You will require both a CD-ROM drive and a hard disk to run the SPSD/M. The Full SPSD/M requires approximately 40 MB (million bytes) of disk storage, while the Demonstration SPSD/M requires about 5 MB.

SOFTWARE REQUIREMENTS

'Glass box' mode is used to simulate the effects of changes not anticipated in the design of the algorithms (such as the introduction of a new tax credit). In this mode the user makes programming changes to SPSM source code using the "C++" programming language.

For 'glass box' mode, Microsoft Visual C++ is required.

A program editor, such as Codewright or the text editor which is included with Microsoft Visual C++ are very useful for browsing SPSM reports and editing parameter files.

Installation Concepts

The CD-ROM that came with your copy of SPSD/M contains the files required to use SPSD/M. The files have been grouped into a number of distinct packages, corresponding to distinct functional parts of SPSD/M. For example, the parameter files used to control SPSD/M and represent the tax/transfer system of various years are grouped into a package called `PARAMETERS`.

When a package is installed, the files (and any associated sub-directories) in the package are placed in a particular target directory on your machine. Each package has an associated default target directory, which may be changed at installation time. For example, the default target directory for the `PARAMETERS` package is the directory `\spsd` on the disk drive you specify when invoking the `install` program.

Installing SPSD/M

This section describes how to run the `install` program. Each step contains a short description of the purpose of the step, together with an example that gives the simplest and most likely responses.

Screen prompts from the install program are shown in a special font (e.g. `Do you wish to be prompted...`) and user responses are shown in the same font in bold (e.g. **Y**) **.** The ENTER symbol indicates that you should press the key labeled `Enter'. A separate box provides additional discussion should a problem occur when performing the operations described in the step. These boxes usually take the form of an explanation of the various error messages that might be produced in the course of the step.

In the example, it is assumed that the Full SPSD/M is being installed from the CD-ROM drive named `D:` to the user's hard disk drive named `C:` using supplied defaults for all prompts.

Note that CTRL C can be used to interrupt the `install` program at any time.

Please follow the installation steps listed below.

STEP 1: Place CD-ROM in drive

STEP 2: Click on Start then on Run

The Start button is found on the windows taskbar.

STEP 3: Enter the name of the CD-ROM drive followed by the name of the installation program and the destination disk drive and click OK.

In this step, enter the full path to the installation program (`install`) together with the destination disk drive as an argument. Please ensure that sufficient space exists on the destination disk drive for the installation. If the drive letter is not valid then the program halts.

D:\INSTALL C: `<enter>`

After entering the `install` command, the computer screen will show the following:

```
Welcome to the SPSD & SPSM Installation Program.
Bienvenue au programme d'installation de la BD/MSPS.
```

STEP 4: Select language of choice

In this step, you will be asked to choose the official language, French or English, to be used for the installation dialogue. The response to this question in no way affects the version of SPSD/M installed.

```
Please enter 'E' for English dialogue.
```

```
S.V.P. entrez la lettre 'F' pour le dialogue français.

E

(Press E or F to continue.)
```

STEP 5: Choose installation packages and paths

In this step, you will be asked to enter and verify information pertaining to each of the packages available in the installation kit. As mentioned, the packages available will vary depending on whether you are installing the Demonstration or Full version of SPSD/M. The program will request information on each package in the kit.

Defaults have been set and a user wishing to make use of the defaults can simply hit the 'ENTER' key in response to each prompt. This is the recommended approach.

Two kinds of information are requested. In the first instance, you will be asked whether you wish to install a particular package. If you indicate that you do wish to install a particular package, you will be prompted to indicate in which directory (on the drive indicated in Step 3 above) the package is to be installed.

Default choices for destination directories are provided. It is desirable to use these defaults, since all of the examples in the guides assume that the default choices displayed have been taken. You may want to change the default destination directory for a package if it conflicts with the scheme used to organize files and directories on your hard disk. The phrase 'destination directory' is synonymous with the phrase 'installation path' used in the `install` program dialogue. Either the forward slash ('/') or the backward slash ('\') may be used in path specifications.

Continuing our example installation, all packages of the full SPSD/M are installed, using the default directory for each package. Default choices, indicated within square brackets [], are selected simply by pressing the ENTER key. Entering any other characters overrides the default response. The installation program will add the trailing `\' to the path, check the validity of the path, and create any needed sub-directories. You will be prompted for a path until a valid path is entered. The program then proceeds to the next package until all packages have been processed.

- `Do you wish to install the 'SPSM' package <1280K> [Y] ? ENTER`
- `Default or new installation path [/spsm] ? ENTER`
-
- `Do you wish to install the 'PARAMETERS' package <7439K> [Y] ? ENTER`
- `Default or new installation path [/spsd] ? ENTER`

- `Do you wish to install the 'SPSD<5%>' package <452K> [Y]? ENTER`
- `Default or new installation path [/spsd ? ENTER`

- `Do you wish to install the 'HELP' package <6871K> [Y]? ENTER`
- `Default or new installation path [/spsm] ? ENTER`

- `Do you wish to install the 'SPSD<100%>' package <10187K> [Y]? ENTER`

- `Default or new installation path [/spsd] ?  ENTER`

- `Do you wish to install the 'GLASS_BOX' package <3262K> [Y]? ENTER`
- `Default or new installation path [/spsm] ?  ENTER`

PROBLEMS:

`Error: 'path' is an existing file, not a directory`

The `install` program cannot create a directory of the specified name, since a file with the same name already exists on the target drive. Pick a different installation path, or else terminate the `install` program by typing CTRL C, rename or delete the offending file, and restart the installation process.

`Error: cannot create directory 'path'`

Check that the specified installation path contains no illegal characters. Check that the target drive (the argument of `install` given in Step 3) is valid. Check that the target disk drive is not full.

STEP 6: Verify packages selected and installation paths

In this step, the `install` program will display a table showing the selected packages and the destination directory for each package. If you indicate that the displayed choices are okay, then the `install` program will proceed and start installing files. If you indicate that the displayed choices require some modification, then the `install` program will return to Step 6 above and allow you to select a different set of packages or change destination directories from the current settings.

```
Size   Package         Installation Paths
----   -------         ------------------
1280K   SPSM              c:/spsm/
7439K   PARAMETERS        c:/spsd/
452K    SPSD(5%)          c:/spsd/
6871K   HELP              c:/spsm/
10237K  SPSD(100%)        c:/spsd/
1543K   GLASS_BOX         c:/spsm/
------
29494K

Do you wish to change any of the above selections [N] ?  ENTER
ENTER Y OR N
```

PROBLEMS:

The disk drive indicated for installation paths is incorrect

The destination disk drive is specified when `install` is originally invoked (Step 3 above). Terminate `install` by pressing CTRL C and re-start the installation process, this time providing the correct drive letter to the `install` program.

STEP 7: Specify file replacement action

In this step, you will be asked to indicate whether or not you wish to be prompted each time the installation program is about to overwrite an existing file. Answering `N` to this question instructs the `install` program to overwrite any identically-named files on the your hard disk without question.

```
Do you wish to be prompted before an existing file is replaced [Y] ?
```

STEP 8: Installation process

After Step 7 is complete the `install` program proceeds to copy the files in the requested packages to the indicated destination directories on your hard disk. You will also be prompted when an existing file is about to be overwritten (if you answered `Y` to the question in Step 7).

As files are written to disk, the `install` program indicates the fact by displaying a continuously updated message at the bottom of your screen. It also indicates when certain of the SPSD/M files are being modified to record licensee information internally.

```
END of SPSD & SPSM Installation Program.
```

Configuration

Once you have installed SPSD/M, all of the files needed to run the SPSM executable program have been written to your hard disk. However, it is still necessary to give the operating system some configuration information before SPSM will run. This information is described in this section. There are four changes to your environment variables that are recommended.

1. The environment variable ‘SPSM’ is used by the SPSM program to locate dialogue files used to communicate with the user and also to generate reports. In addition, it is used to locate files for automatic compilation and linking for ‘glass box’ users.

   If the `SPSM` environment variable is not set, the value `\spsm` (which indicates the directory named `spsm` in the root directory of the current drive) is used. If the configuration of the your machine or network involves the use of more than one hard disk drive, it is advisable to set the SPSM environment variable to reflect where SPSM was actually installed (e.g. `c:\spsm`).

2. The SPSMLANG environment variable is used by SPSM to determine which of two dialogue files, English or French, is to be used to communicate with the user and generate reports. If SPSMLANG is set to the value E, then the English dialogue file will be used. If SPSMLANG is set to F, then the French dialogue file will be used. If SPSMLANG is not set, SPSM operates in English.

3. The environment variable ‘SPSD’ is used by SPSM to specify the default location of database and parameter files. If SPSD is not set, the value `\spsd,`

which indicates the directory named `spsd` in the root directory of the current drive, is used.

4. It is convenient to be able to run the SPSM from any directory. To accomplish this, you must add `\spsm\msdos` or `\spsm\win32` to the `PATH` environment variable.

IF YOU USE WINDOWS NT

In order to change environment variables, open the Settings/Control Panel/System/Environment window. Click on the PATH variable and add "\spsm\win32;" to the string in the Value dialogue and click on Set.

To create the other variables, type in the variable in the Variable dialogue and the setting in the Value box and type Set after each entry. For example, if you installed SPSM on your C: drive with no extra subdirectory, the values that should be added are:

Variable	Value
SPSM	c:\spsm
SPSD	c:\spsd
SPSMLANG	E (or F if you want a French interface)

Any new MSDOS console window will have these values as default. If you want to check these settings, type SET with no arguments at the DOS prompt and the current settings will be displayed.

If you want to change the settings each time you use SPSD/M, you may alternatively type in an MS-DOS prompt:

C:\>**Set spsm=c:\spsm** <ENTER>
C:\>**Set spsd=c:\spsd** <ENTER>
C:\>**Set SPSMLANG=E** <ENTER>
C:\>**Set PATH=(what was previously in your path) \spsm\win32;**<ENTER>

These settings will only be valid in that particular MSDOS window and the settings will be lost when you close the window.

IF YOU USE WINDOWS 95/98

In order to permanently change your environment variables, you must first change your AUTOEXEC.BAT file. Start by making a backup copy of this file so that you may retrieve it if you make an error. Then open AUTOEXEC.BAT in a text editor (e.g. Notepad). If you want to add all four variables, and if you installed SPSD/M in the root C: drive, you would add the following code:

SET spsm=c:\spsm
SET spsd=c:\spsd
SET SPSMLANG=E
PATH=(what was previously in your path)\spsm\win32;

If you installed SPSD/M in some other directory, type in the proper location of the files. You must reboot your machine in order for these changes to be implemented. If you want to check these settings, type SET with no arguments at the DOS prompt and the current settings will be displayed.

If you want to change the settings each time you use SPSD/M, you may alternatively type in an MS-DOS prompt:

C:\>**Set spsm=c:\spsm** <ENTER>
C:\>**Set spsd=c:\spsd** <ENTER>
C:\>**Set SPSMLANG=E** <ENTER>
C:\>**Set PATH=(what was previously in your path) \spsm\win32;**<ENTER>

These settings will only be valid in that particular MSDOS window and the settings will be lost when you close the window.

SPSM CONTROL FILE CONFIGURATION

This section should be read by users who have not used the default destination directories when installing the software and who have decided not to set the environment variable `spsd`, or users who have chosen to install the `SPSD (100%)` package, and not install the `SPSD (5%)` package.

As described more fully in the ***Introduction and Overview Guide*** and in the ***User's Guide***, a parameter file with an extension of `.cpr` controls SPSM operations.

Three parameters in the `*.cpr` files specify where SPSM will look in order to find the database files needed to perform a simulation. These parameters are named INSPSPD, INPFXV, and INPWGT.

If you have installed the `SPSD (5%)` package into a location different that `/spsd` and if you have not set the environment variable `spsd` to reflect this new location, then the files `*.cpr` should be edited, and these three parameters changed to reflect the true location (pathname) of the database files. Alternately, you can ensure that the SPSD environment variable is always set.

If you have chosen to install the `SPSD (100%)` package and not install the `SPSD (5%)` package, the file names indicated in the three parameters should be changed (by removing the trailing '`t`' for tiny) to ensure that `*t.cpr` will refer to the 100% version of the database files.

If these changes are performed then the file `*t.cpr` will be a useful template file on which to base other SPSM runs. These changes can be done interactively using the user dialogue facilities of SPSM, or they may be performed directly using an editor.

Testing the Installation

If the previous installation steps have been followed, SPSM and its associated files should have been successfully installed, and can be tested using the simple example provided in the *Introduction and Overview Guide*. The following box describes problems that may occur in the course of this test run, together with possible fixes.

PROBLEMS:

```
The name specified is not recognized as an
internal or external command, operable program or batch file.
```

This message arises if you attempt to run the `spsm.exe` without the directory `\spsm\win32` present in the `PATH` environment variable. Enter the full path for `spsm.exe`, including the path (e.g. `c:\spsm\win32\spsm.exe`) to continue execution. To avoid this message in the future, set up `PATH` appropriately, as described in the Configuration Section.

```
fatal error(001): Cannot open message file 'xxxxxx'.
```

SPSM cannot locate the file containing dialogue text. Ensure that the `SPSM` environment variable has been set to the same location that the SPSM package was written to during the installation process. Ensure that the `SPSMLANG` environment variable, if set, has either the value `E` or `F`.

Installation Kit Contents

This section describes the contents of each package in the two installation kits.

DEMONSTRATION SPSD/M CONTENTS

The Demonstration SPSD/M installation kit contains three packages, named `SPSM`, `SPSD(5%)`, and `PARAMETERS`.

Package Name:	SPSM
Package Function:	The SPSM package contains the executable programs that implement SPSM. It also includes language-specific dialogue files and a directory of example parameter include files used in SPSD/M Guides.
Package Name:	SPSD(5%)
Package Function:	This package contains the three 5% sub-sample SPSD files.
Package Name	PARAMETERS
Package Function:	This package contains parameter files required to produce a 5% run of SPSM using the 1995 base tax/transfer system.

FULL SPSD/M INSTALLATION KIT CONTENTS

The Full 1995 SPSD/M installation kit contains 6 packages, named SPSM, PARAMETERS, SPSD(5%), SPSD(100%), HELP, and GLASS_BOX.

Package Name:	SPSM
Package Function:	The SPSM package contains the language-specific dialogue files and a directory of example parameter include files. The SPSM package also contains the executable programs that implement SPSM while operating under a Windows 95 or Windows NT environment as well as the utility programs which are described in the *Tools User's Guide*.

Package Name:	PARAMETERS
Package Function:	Parameter files for implementing the tax/transfer system, and accounting for inflation and growth for various years are included in this package. Please see the *Parameter Guide* for a description of these files.

Package Name:	SPSD(5%)
Package Function:	This package contains the 5% sub-sample SPSD files. 5% demographic weight files for the years 1984 through 2001 are also included. If the SPSD(100%) package is installed, it is not necessary to install this package.

Package Name:	SPSD(100%)
Package Function:	This package contains the 100% version of the SPSD database files. 100% demographic weight files for the years 1984 through 2001 are also included.

Package Name:	HELP
Package Function:	This package contains the SPSD/M online help facility

---

Package Name:	GLASS_BOX
Package Function:	This package includes all necessary files, including template files for standard and alternate algorithms, for the 'glass box' user. Please see the *Programmer's Guide* for information on using SPSM in 'glass box' mode. This package contains the reference libraries for the execution of SPSM

Appendix A Installation Notes for Established Users

DIRECTORY MAINTENANCE

Users updating from previous versions of SPSD/M should remove (or rename) their existing /spsd and /spsm directories before running the install.exe program. Alternatively, if desired, the existing directories can be retained, and the target directories for the 1992 release set could be set to names like /spsd92 and /spsm92

using the install utility.[2]

Note that the install program will now make all files write-protected, since experience has shown that it is easy to inadvertently change these files. SPSD/M has been designed so that these files never have to be changed; instead they are used as starting templates for user-modified files. An additional utility, `chmod`, can be used to remove write protection if required (the MS-DOS property attribute can also be used).

CONFIGURING YOUR MACHINE TO WRITE INCLUDE FILES USING NOTEPAD

We encourage SPSM users to use include files in order to organize their work. In order to write these files, you'll need a text editor. Windows 95/98/NT come with a basic text editor called Notepad. You may notice that when using Notepad a .txt extension is automatically added to your include files (*.api; *.mpi; *.cpi).

Should you encounter this problem, go to Windows Explorer. On Windows 95/98 machines, open "View", "Folder Options", "File Types", "New type". In the "Description of type" field, type in "SPSM CPI" and in the "Associated Extension field" type in "CPI". Click "OK". Repeat the steps for api and mpi include files, and you'll find that the automatically generated .txt extensions disappear. On Windows NT machines, the steps are the same except instead of "Folder Options", click "Options".

UPDATING EXISTING PARAMETER FILES TO MORE RECENT VERSION

If you have used past versions of SPSD/M, you may wish to use any .cpr parameter files you had created with the new version. If you use only .cpi files your analyses should continue to run. Since parameters have been added and deleted in this release, old .cpr files will produce errors if you attempt to use them with the current version. The procedure outlined below will create an include file which holds the values of all parameters which differ from the default parameter files distributed as part of the release.

The procedure makes use of the `compparm` program, a description of which may be found in the *Tools User's Guide*. The user should use the parameter comparison program with the -i option. For example if a user had created file called `mybase92.cpr` and wished to run that analysis on the new version they would first create an include file as follows (before installing the new release):

```
compparm -i mybase95.cpr \spsd\ba95.cpr > mybase95.cpi
```

This program would then produce a `.cpi` file which would be read in during a subsequent run with the new version of the SPSD/M. Any `.apr` or `.mpr` files which had been altered should also have appropriate `.api/.mpi` files created and included during a run with the new model.

[2] If you decide to take this approach, ensure that you set the SPSM and PATH environment variables to appropriate values.