SUDAAN Installation Guide
Sun Solaris and Linux

Release 10.0

TABLE OF CONTENTS

1. OVERVIEW AND TECHNICAL SUPPORT

SUDAAN is a single program consisting of a family of procedures used to analyze data from complex surveys and other observational and experimental studies involving cluster-correlated data. A complete description of the capabilities of SUDAAN can be found at **http://www.rti.org/sudaan.**

The following document provides instructions on how to install and run SUDAAN. The most current version of these installation instructions can be obtained by visiting the SUDAAN website at **http://www.rti.org/sudaan** and selecting the *Downloads* tab.

Technical Support

RTI International (Research Triangle Institute) provides limited technical support for SUDAAN problems free of charge. The <u>SUDAAN Language Manual</u> provides detailed information on programming with SUDAAN and the <u>SUDAAN Example Manual</u> provides numerous examples. Both of these manuals can be installed during the SUDAAN setup (as .PDF files). These manuals can also be purchased from the SUDAAN website at **http://www.rti.org/sudaan**. You may also review bug reports, get answers to frequently asked questions and obtain other technical assistance through our website.

For additional technical support please submit a support request available from our website or send an email to **sudaan@rti.org**.

You may also contact the RTI SUDAAN offices at:

> RTI International
> SUDAAN Coordinator
> 3040 Cornwallis Road
> Research Triangle Park, NC 27709-2194
>
> Voice Mail: (919) 541-6602
> FAX: (919) 541-7431
> Email: sudaan@rti.org

Due to the high volume of telephone calls we receive, when calling the SUDAAN office you may be automatically sent to the SUDAAN voice mail. Please leave your name, telephone number and a brief description of the reason for your call. One of our SUDAAN administrators will contact you as soon as possible.

2. INSTALLATION INSTRUCTIONS FOR SUN SOLARIS STANDALONE INDIVIDUAL VERSION

2.1 System Requirements

To run the Standalone Solaris version of SUDAAN Release 10.0 properly, your system must meet this requirement:

Category	Requirement
Operating System	SUN OS 10, Sparc, 64-bit and up

2.2 Software Installation

Standalone SUDAAN 10.0 for Solaris is supplied on a CD-ROM. The program files for this version of SUDAAN are located in the directory /SUDAAN10/Solaris/Std, in the file sudaan.tar. This *tar* file contains the following files:

sudproc	The SUDAAN executable
sudinit	Program for initializing or updating the SUDAAN license
SUDAAN.MSG	The SUDAAN message file

To Install the SUDAAN Program Files:

These instructions assume the installer is using the C shell.

1. Before extracting the software from the CD-ROM, create a destination directory for the SUDAAN 10 install at some preferred location on your file system, for example /usr/local/SUDAAN_10x/Standalone. **Note that you cannot install SAS-callable SUDAAN in the same directory as the standalone version.**

2. Your SUDAAN distribution media must be mounted. Under Solaris, most system managers elect to have a daemon running that automatically mounts the CD-ROM when a new one is inserted. If not, however, you will need to mount the CD-ROM.

3. From the directory created in step 1, execute the following *tar* command to extract the SUDAAN program files:

   tar xvf /cdrom/ SUDAAN10/Solaris/Std /sudaan.tar

4. Verify that all files listed above are present in the SUDAAN directory.

In addition to the SUDAAN program files, the CD contains the SUDAAN Language and Example Manuals as well as the SUDAAN Help files.

To Install the SUDAAN Manual Files:

1. Create a destination directory for the manual files, for example at /usr/local/SUDAAN_10x/Manual.

2. From the directory created in Step 1, execute the following *tar* command to extract the SUDAAN manual files:

    tar xvf /cdrom/SUDAAN10/Manuals/manual.tar

3. The SUDAAN Language Manual and the SUDAAN Example Manual are files in PDF format. Use Adobe Acrobat Reader to view these documents. (Note that Acrobat Reader is available free from Adobe's website.) You can find additional SUDAAN examples on our website.

To Install the SUDAAN Help Files:

1. Create a destination directory for the help files, for example at /usr/local/SUDAAN_10x/Help.

2. From the directory created in Step 1, execute the following *tar* command to extract the SUDAAN manual files:

    tar xvf /cdrom/SUDAAN10/Help/help.tar

3. Use your browser to view the SUDAAN help files. Begin with SUDAAN.htm

Note that SUDAAN's Help is available on our website at http://www.rti.org/sudaan. Click on *Technical Assistance* and then *SUDAAN 10 Help*. The default version of the help requires Macromedia Flash Player 6.0 or later, but you can choose to view the non-Flash version of the help if you prefer.

2.3   Procedure to Initialize or Renew a SUDAAN License

Along with your SUDAAN software, you received a 22-digit Product Identification Key. To initialize your software, do the following:

1. Enter the directory where the SUDAAN program files are located. (For example /usr/local/SUDAAN_10x/Standalone)

2. Execute the *sudinit* program using the following syntax:

    sudinit p=<22-digit product key> c=<company_name> o=<owner>

    Enter your name (<owner>) and company (<company_name>) as they should appear in the SUDAAN banner, and your 22-digit product key. Note that you should place the company name and owner name in quotes if they contain spaces. Spaces should not be included in the product key and letters in the product key may be entered in upper or lower case.

At this point your software is ready to use.

When you renew your current annual license, you will receive a new product key. Once you have the new key, execute the *sudinit* program again using this new 22-digit key to update your license. You do not need to supply your company name and owner name when you renew the software, unless your information has changed.

2.4 Setting up SUDAAN

After installation, each SUDAAN user *must* set up the SUDWORK environment variable and should add the SUDAAN directory created above (/usr/local/SUDAAN_10x/Standalone) to the path environment variable by adding the following lines in the *.cshrc* or *.login* file for C-shell users, or the *.profile* for Korn and Bourne shell users.

C-shell users:

    .cshrc or .login: set path=($path /usr/local//SUDAAN_10x/Standalone)
                           set SUDWORK=*temp_directory*

Korn/Bourne Shell users:

    .profile: PATH=$PATH:/usr/local/SUDAAN_10x/Standalone
                           SUDWORK=*temp_directory*
                           export PATH SUDWORK

where *temp_directory* is the location where that user's temporary SUDAAN files should be written. The user must create this directory before using SUDAAN if it does not already exist.

Note that users must logout and login again before these settings are active.

2.5 Running SUDAAN

The syntax for executing Standalone SUDAAN from the Solaris prompt is:

```
sudproc infile [outfile] [-r | -a]
```

where `infile` is the name of the file containing SUDAAN procedure statements, `outfile` is the name of the file to which you should direct outputs, and `-r` and `-a` are write options.

If `outfile` already exists:

        `-r` causes the file to be overwritten, and
        `-a` causes the output to be appended to the existing file

See the SUDAAN Language and Examples Manuals for complete information on using the SUDAAN procedures.

3. INSTALLATION INSTRUCTIONS FOR SUN SOLARIS SAS-CALLABLE INDIVIDUAL VERSION

3.1   System Requirements

To run the SAS-Callable Solaris version of SUDAAN Release 10.0 properly, your system must meet this requirement:

Category	Requirement
Operating System	SUN OS 10, Sparc, 64-bit and up
Software	SAS® 9

3.2   Software Installation

Standalone SUDAAN 10.0 for Solaris is supplied on a CD-ROM. The program files for this version of SUDAAN are located in the directory /solaris/sas_call in the file sudaan.tar. This *tar* file contains the following files:

crosstab	The SUDAAN CROSSTAB procedure
descript	The SUDAAN DESCRIPT procedure
hotdeck	The SUDAAN HOTDECK procedure
kapmeier	The SUDAAN KAPMEIER procedure
loglink	The SUDAAN LOGLINK procedure
multilog	The SUDAAN MULTILOG procedure
ratio	The SUDAAN RATIO procedure
records	The SUDAAN RECORDS procedure
regress	The SUDAAN REGRESS procedure
rlogist	The SUDAAN RLOGIST (LOGISTIC) procedure
survival	The SUDAAN SURVIVAL procedure
wtadjust	The SUDAAN WTADJUST procedure
sudinit	Program for initializing or updating the SUDAAN license
SUDAAN.MSG	The SUDAAN message file

To Install the SUDAAN Program Files:

These instructions assume the installer is using the C shell.

1. Before extracting the software from the CD-ROM, create a destination directory for the SUDAAN 10 install at some preferred location on your file system, for example /usr/local/SUDAAN_10x/SAS-Callable. **Note that you cannot install SAS-callable SUDAAN in the same directory as the Standalone version.**

2. Your SUDAAN distribution media must be mounted. Under Solaris, most system managers elect to have a daemon running that automatically mounts the CD-ROM when a new one is inserted. If not, however, you will need to mount the CD-ROM.

3. From the directory created in step 1, execute the following *tar* command to extract the SUDAAN program files:

> tar xvf /cdrom/SUDAAN10/Solaris/SASCall/sudaan.tar

4. Verify that all files listed above are present in the SUDAAN directory.

In addition to the SUDAAN program files, the CD contains the SUDAAN Language and Example Manuals as well as the SUDAAN Help files.

To Install the SUDAAN Manual Files:

1. Create a destination directory for the manual files, for example at /usr/local/SUDAAN_10x/Manual.

2. From the directory created in Step 1, execute the following *tar* command to extract the SUDAAN manual files:

> tar xvf /cdrom/SUDAAN10/Manuals/manual.tar

3. The SUDAAN Language Manual and the SUDAAN Example Manual are files in PDF format. Use Adobe Acrobat Reader to view these documents. (Note that Acrobat Reader is available free from Adobe's website.) You can find additional SUDAAN examples on our website.

To Install the SUDAAN Help Files:

1. Create a destination directory for the help files, for example at /usr/local/SUDAAN_10x/Help.

2. From the directory created in Step 1, execute the following *tar* command to extract the SUDAAN manual files:

> tar xvf /cdrom/ SUDAAN10/Help/help.tar

3. Use your browser to view the SUDAAN help files. Begin with SUDAAN.htm

Note that SUDAAN's Help is available on our website at http://www.rti.org/sudaan. Click on *Technical Assistance* and then *SUDAAN 10 Help*. The default version of the help requires Macromedia Flash Player 6.0 or later, but you can choose to view the non-Flash version of the help if you prefer.

3.3   Procedure to Initialize or Renew a SUDAAN License

Along with your SUDAAN software, you received a 22-digit Product Identification Key. To initialize your software, do the following:

1. Enter the directory where the SUDAAN program files are located. (For example /usr/local/SUDAAN_10x/SAS-Callable)

2. Execute the *sudinit* program using the following syntax:

    sudinit p=<22-digit product key> c=<company_name> o=<owner>

    Enter your name (<owner>) and company (<company_name>) as they should appear in the SUDAAN banner, and your 22-digit product key. Note that you should place the company name and owner name in quotes if they contain spaces. Spaces should not be included in the product key and letters in the product key may be entered in upper or lower case.

At this point your software is ready to use.

When you renew your current annual license, you will receive a new product key. Once you have the new key, execute the *sudinit* program again using this new 22-digit key to update your license. You do not need to supply your company name and owner name when you renew the software, unless your information has changed.

3.4   Setting up SUDAAN

After installation, each SUDAAN user *must* set up the SUDLIB and SUDWORK environment variables, by adding the following lines to the .cshrc or .login file for C-shell users, or the .profile file for Korn/Bourne shell users.

C-shell users:

    .cshrc or .login: setenv SUDLIB=/usr/local//SUDAAN_10x/SAS-Callable
                         setenv SUDWORK=*temp_directory*

Korn/Bourne Shell users:

    .profile: SUDLIB=/usr/local/SUDAAN_10x/SAS-Callable
                         SUDWORK=*temp_directory*
                         export SUDLIB SUDWORK

where *temp_directory* is the location where that user's temporary SUDAAN files should be written. The user must create this directory before using SUDAAN if it does not already exist.

Note that users must logout and login again before these settings are active.

3.5   Running SUDAAN

Once SUDAAN setup is complete, there are two ways to execute a SAS-Callable SUDAAN program.

1. The user or system manager can insert the SUDAAN directory (for example /usr/local/SUDAAN_10x/SAS-Callable) at the end of the –PATH command in the sasv9.cfg file before the closing parenthesis, but ahead of any previous SUDAAN references. This will enable SAS to find and dynamically load the SUDAAN procedures as needed. Once this setup is completed, to execute SAS with the SUDAAN program *myprog.sas* simply type

    sas myprog.sas

2. Each user can add a –PATH command to the SAS command line when invoking SUDAAN procedures. The syntax for executing SAS on the SUDAAN program *myprog.sas* in this case is

    sas –path /usr/local/SUDAAN_10x/SAS-Callable myprog.sas

4. INSTALATION INSTRUCTIONS FOR THE LINUX, STANDALONE INDIVIDUAL VERSION

4.1 System Requirements

To run the Standalone Linux version of SUDAAN Release 1.0 properly, your system must meet these requirements:

Category   **Requirement**
Operating System   Red Hat Enterprise Linux 3
Kernel   2.4.21

Note that SUDAAN has been produced and tested using Red Hat Enterprise Linux 3. If you wish to try Standalone SUDAAN 10 for LINUX on a different version of LINUX please contact us.

4.2 Software Installation

SUDAAN 10.0 for LINUX is supplied on a CD-ROM. The program files for this version of SUDAAN are located in the directory /SUDAAN10/Linux/Std in the file sudaan.tar. This *tar* file contains the following files:

sudproc   The SUDAAN program executable
sudinit   Program for initializing or updating the SUDAAN license
SUDAAN.MSG   The SUDAAN message file

To Install the SUDAAN Program Files:

1. Before extracting the software from the CD-ROM, create a destination directory for the SUDAAN 10 files at some preferred location on your file system, for example /usr/local/SUDAAN_10x/Standalone. **Note that you cannot install Standalone SUDAAN in the same directory as the SAS-Callable version of SUDAAN.**

2. Copy the file sudaan.tar into the directory created in step 1.

3. From the directory created in step 1, execute the following *tar* command to extract the SUDAAN program files:

    tar xvf sudaan.tar

or from a graphical interface simply double click on the sudaan.tar file to extract the files.

4. Verify that all files listed above are present in the directory created in step 1.

In addition to the SUDAAN program files, the CD contains the SUDAAN Language and Example

Manuals as well as the SUDAAN Help files.

To Install the SUDAAN Manual Files:

1. Create a destination directory for the manual files, for example at /usr/local/SUDAAN_10x/Manual, and copy the file /SUDAAN10/Manuals/manual.tar from the CD to this directory.

2. From the directory created in Step 1, execute the following *tar* command to extract the SUDAAN manual files:

    tar xvf manual.tar

    or from a graphical interface simply double click on the manual.tar file to extract the files.

3. The SUDAAN Language Manual and the SUDAAN Example Manual are files in PDF format. Use Adobe Acrobat Reader to view these documents. (Note that Acrobat Reader is available free from Adobe's website.) You can find additional SUDAAN examples on our website.

To Install the SUDAAN Help Files:

1. Create a destination directory for the help files, for example at /usr/local/SUDAAN_10x/Help and copy the file /SUDAAN10/Help/help.tar into it.

2. From the directory created in Step 1, execute the following *tar* command to extract the SUDAAN manual files:

    tar xvf help.tar

    or from a graphical interface simply double click on the help.tar file to extract the files.

3. Use your browser to view the SUDAAN help files. Begin with SUDAAN.htm

Note that SUDAAN's Help is available on our website at http://www.rti.org/sudaan. Click on *Technical Assistance* and then *SUDAAN 10 Help*.

4.3   Procedure to Initialize or Renew a SUDAAN License

Along with your SUDAAN software, you received a 22-digit Product Identification Key. To initialize your software, do the following:

1. Enter the directory where the SUDAAN program files are located. (For example /usr/local/SUDAAN_10x/Standalone)

2. Execute the *sudinit* program using the following syntax:

    sudinit p=<22-digit product key> c=<company_name> o=<owner>

Enter your name (<owner>) and company (<company_name>) as they should appear in the SUDAAN banner, and your 22-digit product key. Note that you should place the company name and owner name in quotes if they contain spaces. Spaces should not be included in the product key and letters in the product key may be entered in upper or lower case.

At this point your software is ready to use.

When you renew your current annual license, you will receive a new product key. Once you have the new key, execute the *sudinit* program again using this new 22-digit key to update your license. You do not need to supply your company name and owner name when you renew the software, unless your information has changed.

4.4   Setting up SUDAAN

After installation, each SUDAAN user *must* set up the SUDWORK environment variable and should add the directory location of the SUDAAN executable to their PATH. For the default Bash shell, for example, the following commands should be placed in .bash_profile. if SUDAAN is installed in /usr/local/SUDAAN_10x/Standalone:

.bash_profile: PATH=$PATH:/usr/local/SUDAAN_10x/Standalone
                        SUDWORK=*temp_directory*
                        export PATH
                        export SUDWORK

where *temp_directory* is the location where that user's temporary SUDAAN files should be written. The user must create this directory before using SUDAAN if it does not already exist.

Note that users must logout and login again before these settings are active.

4.5   Running SUDAAN

The syntax for executing Standalone SUDAAN from the Linux command prompt is:

```
sudproc infile [outfile] [-r | -a]
```

where `infile` is the name of the file containing SUDAAN procedure statements, `outfile` is the name of the file to which you should direct outputs, and `-r` and `-a` are write options.

If `outfile` already exists:

        `-r` causes the file to be overwritten, and
        `-a` causes the output to be appended to the existing file

See the SUDAAN Language and Examples Manuals for complete information on using the SUDAAN procedures.

5. INSTALLATION INSTRUCTIONS FOR LINUX, SAS-CALLABLE INDIVIDUAL USER VERSION

5.1 System Requirements

To run the SAS-Callable Linux version of SUDAAN Release 10.0 properly, your system must meet these requirements:

Category	Requirement
Operating System	Red Hat Enterprise Linux 3
Kernel	2.4.21
Software	SAS® 9 for Linux

Note that SUDAAN has been produced and tested using Red Hat Enterprise Linux 3. If you wish to try SAS-callable SUDAAN for LINUX on a different version of LINUX please contact us.

5.2 Software Installation

SUDAAN 10.0 for LINUX is supplied on a CD-ROM. The program files for this version of SUDAAN are located in the directory /SUDAAN10/Linux/SASCall in the file sudaan.tar. This *tar* file contains the following files:

crosstab	The SUDAAN CROSSTAB procedure
descript	The SUDAAN DESCRIPT procedure
hotdeck	The SUDAAN HOTDECK procedure
kapmeier	The SUDAAN KAPMEIER procedure
loglink	The SUDAAN LOGLINK procedure
multilog	The SUDAAN MULTILOG procedure
ratio	The SUDAAN RATIO procedure
records	The SUDAAN RECORDS procedure
regress	The SUDAAN REGRESS procedure
rlogist	The SUDAAN RLOGIST (LOGISTIC) procedure
survival	The SUDAAN SURVIVAL procedure
wtadjust	The SUDAAN WTADJUST procedure
sudinit	Program for initializing or updating the SUDAAN license
SUDAAN.MSG	The SUDAAN message file

To Install the SUDAAN Program Files:

1. Before extracting the software from the CD-ROM, create a destination directory for the SUDAAN 10 files at some preferred location on your file system, for example /usr/local/SUDAAN_10x/SAS-

Callable. **Note that you cannot install SAS-callable SUDAAN in the same directory as the Standalone version of SUDAAN.**

2.   Copy the file sudaan.tar into the directory created in step 1.

3.   From the directory created in step 1, execute the following *tar* command to extract the SUDAAN program files:

      tar xvf sudaan.tar

or from a graphical interface simply double click on the sudaan.tar file to extract the files.

4.   Verify that all files listed above are present in the directory created in step 1.

In addition to the SUDAAN program files, the CD contains the SUDAAN Language and Example Manuals as well as the SUDAAN Help files.

To Install the SUDAAN Manual Files:

1.   Create a destination directory for the manual files, for example at /usr/local/SUDAAN_10x/Manual, and copy the file /SUDAAN10/Manuals/manual.tar from the CD to this directory.

2.   From the directory created in Step 1, execute the following *tar* command to extract the SUDAAN manual files:

      tar xvf manual.tar

or from a graphical interface simply double click on the manual.tar file to extract the files.

3.   The SUDAAN Language Manual and the SUDAAN Example Manual are files in PDF format. Use Adobe Acrobat Reader to view these documents. (Note that Acrobat Reader is available free from Adobe's website.) You can find additional SUDAAN examples on our website.

To Install the SUDAAN Help Files:

1.   Create a destination directory for the help files, for example at /usr/local/SUDAAN_10x/Help and copy the file /SUDAAN10/Help/help.tar into it.

2.   From the directory created in Step 1, execute the following *tar* command to extract the SUDAAN manual files:

      tar xvf help.tar

or from a graphical interface simply double click on the help.tar file to extract the files.

3.   Use your browser to view the SUDAAN help files. Begin with SUDAAN.htm

Note that SUDAAN's Help is available on our website at http://www.rti.org/sudaan. Click on *Technical Assistance* and then *SUDAAN 10 Help*.

5.3   Procedure to Initialize or Renew a SUDAAN License

Along with your SUDAAN software, you received a 22-digit Product Identification Key. To initialize your software, do the following:

1. Enter the directory where the SUDAAN program files are located. (For example /usr/local/SUDAAN_10x/SAS-Callable)

2. Execute the *sudinit* program using the following syntax:

    sudinit p=<22-digit product key> c=<company_name> o=<owner>

    Enter your name (<owner>) and company (<company_name>) as they should appear in the SUDAAN banner, and your 22-digit product key. Note that you should place the company name and owner name in quotes if they contain spaces. Spaces should not be included in the product key and letters in the product key may be entered in upper or lower case.

At this point your software is ready to use.

When you renew your current annual license, you will receive a new product key. Once you have the new key, execute the *sudinit* program again using this new 22-digit key to update your license. You do not need to supply your company name and owner name when you renew the software, unless your information has changed.

5.4   Setting up SUDAAN

After installation, each SUDAAN user *must* create SUDLIB and SUDWORK environment variables. For the default Bash shell the following commands should be placed in .bash_profile if SUDAAN is installed in /usr/local/SUDAAN_10x/SASCallable:

.bash_profile: SUDLIB=/usr/local/SUDAAN_10x/SASCallable
                           SUDWORK=*temp_directory*
                           export SUDLIB
                           export SUDWORK

where *temp_directory* is the location where that user's temporary SUDAAN files should be written. The user must create this directory before using SUDAAN if it does not already exist.

Note that users must logout and login again before these settings are active.

5.5   Running SUDAAN

Once SUDAAN setup is complete, there are two ways to execute a SAS-Callable SUDAAN program. The first is preferred.

1. The user or system manager can insert the SUDAAN directory (for example /usr/local/SUDAAN_10x/SAS-Callable) at the end of the –PATH command in the sasv9.cfg file before the closing parenthesis, but ahead of any previous SUDAAN references. This will enable SAS to find and dynamically load the SUDAAN procedures as needed. Once this setup is completed, to execute SAS with the SUDAAN program *myprog.sas* simply type

    sas myprog.sas

    (or whatever is used on your system to invoke SAS).

2. Each user can add a –PATH command to the SAS command line when invoking SUDAAN procedures. The syntax for executing SAS on the SUDAAN program *myprog.sas* in this case is

    sas –path /usr/local/SUDAAN_10x/SASCallable myprog.sas