

SUDAAN Installation Guide

Solaris and Linux Installation 32 and 64 bit Operating Systems

Release 11.0.1

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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 for both 32-bit (x32) and 64-bit (x64) operating systems. *If you are installing SAS-callable SUDAAN and you have 64-bit SAS, it is critical that you install x64 SUDAAN software. Similarly, if you are installing SAS-callable SUDAAN and you have 32-bit SAS, it is critical that you install x32 SUDAAN software. If you would like to change your license from x32 to x64 (or vice-versa), please contact the RTI SUDAAN office (see Technical Support, below).*

The most current version of this installation guide can be found by visiting the SUDAAN website at <http://www.rti.org/sudaan>, selecting the *Downloads* tab, and then selecting *SUDAAN 11*. The most current version of the SUDAAN 11 software can be found at the same location.

Technical Support

RTI International provides limited technical support for SUDAAN problems free of charge. The [SUDAAN Language Manual](#) provides detailed information on programming with SUDAAN and the SUDAAN website shows numerous example programs. The SUDAAN Language Manual can be installed during the SUDAAN setup (as a PDF file). Hardcopy versions of this manual 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:

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SUDAAN Coordinator
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Voice Mail: (919) 541-6602
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Due to the high volume of telephone calls we receive, you may automatically be sent to the SUDAAN voice mail when you call the SUDAAN office. 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 THE COMMAND LINE INDIVIDUAL VERSION

2.1 System Requirements

To run the command line version of SUDAAN Release 11.0.1, your system must meet the following requirements:

For Solaris:

<u>Category</u>	<u>Requirement</u>
Operating System	Solaris 11, x86, 64-bit

For Linux, 64-bit:

<u>Category</u>	<u>Requirement</u>
Operating System	Red Hat Enterprise Linux 6, 64-bit

For Linux, 32-bit:

<u>Category</u>	<u>Requirement</u>
Operating System	Red Hat Enterprise Linux 6, 32-bit

Note that SUDAAN for Linux has been produced and tested using Red Hat Enterprise Linux 6.3 and 6.4. However, it may work on other versions or distributions as well. Please contact us if you wish to try SUDAAN 11.0.1 on a different version of Red Hat Enterprise Linux or on a different Linux distribution.

2.2 Software Installation

The command line version of SUDAAN 11.0.1 is supplied as a zip file located on a CD-ROM or downloaded from the SUDAAN website. The first step in installing SUDAAN is to extract the contents of the zip file to a location that is accessible from the machine where you wish to install SUDAAN. The zip file includes:

- this installation guide document,
- the SUDAAN Language Manual, and
- SUDAAN program files for all Solaris and Linux platforms, including both command line and SAS-callable versions.

Installing SUDAAN involves copying files from the extracted zip file contents into locations on your file system.

To Install the SUDAAN Program Files:

1. Create a destination directory for the SUDAAN program files at some preferred location on your file system, for example `/usr/local/sudaan-11.0.1/command`. **Note that you cannot install command line SUDAAN in the same directory as the SAS-callable version.**
2. Locate the SUDAAN program files within the contents extracted from the SUDAAN zip file. The location will vary depending on your platform.

<u>Platform</u>	<u>Location</u>
Solaris	Solaris/Command
Linux, 64-bit	Linux64/Command
Linux, 32-bit	Linux32/Command

Copy all the program files for your platform to the directory created in Step 1.

3. Verify that the following files are present in the directory created in Step 1:

<u>File</u>	<u>Description</u>
<code>sudproc</code>	the SUDAAN executable
<code>sudinit</code>	program for initializing or updating the SUDAAN license
<code>SUDAAN.MSG</code>	the SUDAAN message file

4. Give executable permissions to the `sudproc` and `sudinit` programs by opening a terminal window, changing the working directory to the one created in Step 1, and issuing the following commands:

```
chmod 755 sudproc
chmod 700 sudinit
```

To Install the SUDAAN Manual File:

1. Create a destination directory for the SUDAAN manual file at some preferred location on your file system, for example at `/usr/local/sudaan-11.0.1/manual`.
2. Locate the SUDAAN manual file within the contents extracted from the SUDAAN zip file. The file is named "SUDAAN Language Manual.pdf" and is located in the Manual subdirectory. Copy the manual file to the directory created in Step 1.

The SUDAAN Language Manual is a file in PDF format and should be viewed using PDF viewer software. Such software may already be installed on your Solaris or Linux computer. One option is the Adobe Acrobat Reader, available for free from Adobe's website. You can find SUDAAN examples on the SUDAAN website.

2.3 Procedure to Initialize or Renew a SUDAAN License

To initialize your software, perform the following steps:

1. Enter the directory where the SUDAAN program files are located (for example, /usr/local/sudaan-11.0.1/command).
2. Execute the *sudinit* program using the following syntax:

```
./sudinit p=<22-digit-product-key> c=<company-name> o=<owner> r=11.0.1
```

The <22-digit-product-key> is the Product Identification Key that you should have received along with your SUDAAN software. Enter your name (<owner>) and company (<company-name>) as they should appear in the SUDAAN banner. 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. Letters in the product key may be entered in upper or lower case.

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 add the SUDAAN directory created above (/usr/local/sudaan-11.0.1/command) to the path environment variable. One way to do this is to add the following lines to the *~/.profile* or *~/.bash_profile* file (for Bash and compatible shells) or the *~/.cshrc* or *~/.login* file (for C-shell and compatible shells).

Bash shell users:

```
.profile or .bash_profile:  
export PATH=$PATH:/usr/local/sudaan-11.0.1/command  
export SUDWORK=temp_directory
```

C-shell users:

```
.cshrc or .login:  
set path=($path /usr/local/sudaan-11.0.1/command)  
setenv SUDWORK=temp_directory
```

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 log out and back in again before these settings are active.

2.5 Running SUDAAN

The syntax for executing command line SUDAAN 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 where you wish to direct output, and `-r` and `-a` are write options described below:

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 Manual](#) for complete information on using the SUDAAN procedures.

3. INSTALLATION INSTRUCTIONS FOR THE SAS-CALLABLE INDIVIDUAL VERSION

3.1 System Requirements

To run the SAS-callable version of SUDAAN Release 11.0.1, your system must meet the following requirements:

For Solaris:

<u>Category</u>	<u>Requirement</u>
Operating System	Solaris 11, x86, 64-bit
Software	SAS® 9, 64-bit

For Linux, 64-bit:

<u>Category</u>	<u>Requirement</u>
Operating System	Red Hat Enterprise Linux 6, 64-bit
Software	SAS® 9, 64-bit

For Linux, 32-bit:

<u>Category</u>	<u>Requirement</u>
Operating System	Red Hat Enterprise Linux 6, 32-bit
Software	SAS® 9, 32-bit

Note that SUDAAN for Linux has been produced and tested using Red Hat Enterprise Linux 6.3 and 6.4. However, it may work on other versions or distributions as well. Please contact us if you wish to try SUDAAN 11.0.1 on a different version of Red Hat Enterprise Linux or on a different Linux distribution.

3.2 Software Installation

The SAS-callable version of SUDAAN 11.0.1 is supplied as a zip file located on a CD-ROM or downloaded from the SUDAAN website. The first step in installing SUDAAN is to extract the contents of the zip file to a location that is accessible from the machine where you wish to install SUDAAN. The zip file includes:

- this installation guide document,
- the SUDAAN Language Manual, and

- SUDAAN program files for all Solaris and Linux platforms, including both command line and SAS-callable versions.

Installing SUDAAN involves copying files from the extracted zip file contents into locations on your file system.

To Install the SUDAAN Program Files:

1. Create a destination directory for the SUDAAN program files at some preferred location on your file system, for example /usr/local/sudaan-11.0.1/sas-callable. **Note that you cannot install SAS-callable SUDAAN in the same directory as the command line version.**
2. Locate the SUDAAN program files within the contents extracted from the SUDAAN zip file. The location will vary depending on your platform.

<u>Platform</u>	<u>Location</u>
Solaris	Solaris/SASCallable
Linux, 64-bit	Linux64/SASCallable
Linux, 32-bit	Linux32/SASCallable

Copy all the program files for your platform to the directory created in Step 1.

3. Verify that the following files are present in the directory created in Step 1:

<u>File</u>	<u>Description</u>
crosstab	the SUDAAN CROSSTAB procedure
descript	the SUDAAN DESCRIPT procedure
hotdeck	the SUDAAN HOTDECK procedure
impute	the SUDAAN IMPUTE 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
vargen	the SUDAAN VARGEN procedure
wtadjust	the SUDAAN WTADJUST procedure
wtadjx	the SUDAAN WTADJX procedure
sudinit	program for initializing or updating the SUDAAN license
SUDAAN.MSG	the SUDAAN message file

4. Give executable permissions to the *sudinit* program by opening a terminal window, changing the working directory to the one created in Step 1, and issuing the following command:

```
chmod 700 sudinit
```

To Install the SUDAAN Manual File:

1. Create a destination directory for the SUDAAN manual file at some preferred location on your file system, for example at `/usr/local/sudaan-11.0.1/manual`.
2. Locate the SUDAAN manual file within the contents extracted from the SUDAAN zip file. The file is named "SUDAAN Language Manual.pdf" and is located in the Manual subdirectory. Copy the manual file to the directory created in Step 1.

The SUDAAN Language Manual is a file in PDF format and should be viewed using PDF viewer software. Such software may already be installed on your Solaris or Linux computer. One option is the Adobe Acrobat Reader, available for free from Adobe's website. You can find SUDAAN examples on the SUDAAN website.

3.3 Procedure to Initialize or Renew a SUDAAN License

To initialize your software, perform the following steps:

1. Enter the directory where the SUDAAN program files are located (for example, `/usr/local/sudaan-11.0.1/sas-callable`).
2. Execute the *sudinit* program using the following syntax:

```
./sudinit p=<22-digit-product-key> c=<company-name> o=<owner> r=11.0.1
```

The `<22-digit-product-key>` is the Product Identification Key that you should have received along with your SUDAAN software. Enter your name (`<owner>`) and company (`<company-name>`) as they should appear in the SUDAAN banner. 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. Letters in the product key may be entered in upper or lower case.

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. One way to do this is to add the following lines to the `~/.profile` or `~/.bash_profile` file (for Bash and compatible shells) or the `~/.cshrc` or `~/.login` file (for C-shell and compatible shells).

Bash shell users:

```
.profile or .bash_profile:  
export SUDLIB=/usr/local/sudaan-11.0.1/sas-callable  
export SUDWORK=temp_directory
```

C-shell users:

```
.cshrc or .login:  
setenv SUDLIB=/usr/local/sudaan-11.0.1/sas-callable  
setenv SUDWORK=temp_directory
```

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 log out and back in again before these settings are active.

The system administrator must update the SAS configuration file to append the SUDAAN directory to the SAS PATH variable. This will enable SAS to find and dynamically load the SUDAAN procedures as needed. The configuration file should be updated using the instructions below:

- The SAS configuration file is named `sasv9_local.cfg` or `sasv9.cfg`, and its location on the file system will vary depending on the version of SAS and where SAS is installed. Once you have found the SAS configuration file, open it and locate the PATH variable. Insert the SUDAAN directory (for example `/usr/local/sudaan-11.0.1/sas-callable`) at the end of the list of paths in the PATH specification. **It is important that the SUDAAN directory is inserted *after* the existing SAS directories, not ahead of them. Otherwise, SAS may not function properly.** For example, your PATH specification may look like this after inserting the SUDAAN directory:

```
-PATH (  
    !SASROOT/sasexe  
    /usr/local/sudaan-11.0.1/sas-callable  
)
```

- If older SUDAAN directories are already present in the PATH specification, we recommend that you remove them. If you have reason to keep the older SUDAAN directories in the PATH, be sure to insert the new SUDAAN directory ahead of them.
- When the PATH specification includes multiple directories, enclose the list of directories in a set of parentheses. If your existing PATH includes just one directory, the parentheses may have been omitted. In that case, be sure to insert parentheses around the list of directories after you insert the SUDAAN directory. If your existing PATH already includes multiple directories, be sure to insert the SUDAAN directory before the closing parenthesis.

3.5 Running SUDAAN

SAS-callable SUDAAN is run automatically when you submit a SAS program that contains SUDAAN procedures. For example, if the SAS program *myprog.sas* contains SUDAAN procedures, you can execute the program in SAS using the command:

```
sas myprog.sas
```