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Installation Instructions for SAS® Clinical Standards Toolkit in SAS 9.1.3

SAS® Documentation

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CHAPTER 1

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Prerequisites

The installation uses Apache Ant scripts to move and edit files. Before following the instructions, you should have the following installed and accessible on your system.

- Apache Ant V1.8.1, available from http://ant.apache.org. Select the **binary** version of Ant as it is precompiled and ready to run with your Java environment. Make sure that your Java environment meets the prerequisites for Ant. Also, make sure that you have your environment variables JAVA_HOME and ANT_HOME set. ANT_HOME should be set to the directory where you installed Ant and you should include ANT_HOME\bin in your PATH variable.
- Ant-Contrib V1.0b3 or higher, available from http://ant-contrib.sourceforge.net. At the time of publication, the latest version that was available on the download page was version **1.0b3**. (See the figure at the end of the document.) Expanding this selection allows it to be downloaded as source code or a precompiled version. The precompiled version was named **ant-contrib-1.0b3-bin.zip**.

  Perform the following steps on your local PC, realizing that your steps might vary from those steps that are documented here. Download the precompiled ZIP file to your system and expand the ZIP file. Within the directory that you created there is a file named ant-contrib-1.0b3.jar. Copy this file to the \lib directory of your ANT installation (for example, C:\apache-ant-1.7.1\lib).

You should also have downloaded the SAS Clinical Standards Toolkit ZIP file.

Information to Know Before Starting

In the following scripts, the following tags are used.

Table 1.1 Tags Used

<global_library_path>	_____ The directory that you would like the installation procedure to create and use as the global library. The standards that are supplied by SAS are installed in this location. The default is C:\cstGlobalLibrary.
<cst_temp_dir>	_____ The directory to where you have downloaded the installation ZIP file.
<sas_install_dir>	_____ The main installation directory for SAS. If you have installed SAS in the default Windows location (for example, C:\Program Files\SAS\SAS 9.1), then the value is C:\Program Files\SAS. You should not include the "SAS 9.1" directory. If you installed SAS somewhere else (for example, C:\SAS TEST\SAS 9.1 SP4), then the value is C:\SAS TEST
<sas913_install_dir>	_____ The actual directory for SAS V9.1.3. If you have installed SAS in the default windows location (C:\Program Files\SAS\SAS 9.1), then the value is SAS 9.1. If you have installed SAS somewhere else (for example, C:\SAS TEST\SAS 9.1 SP4), then the value is SAS 9.1 SP4.

Installation on Windows

Altering Where the Install Script Looks for SAS

The installation script installs the modules in the main SAS directory and then executes configuration scripts from there. By default, this location is set to C:\Program Files\SAS. If your version of SAS V9.1.3 SP4 is in a different location, then you need to make changes before running the installation BAT file. These changes are outlined in step 3 below. It is important that you follow these instructions to make sure that the installation scripts and post-installation process work properly.

Installation Steps

1. Unzip the CST-SAS913-windows.zip file within <cst_temp_dir>.

   You should see two directories: *mva* and *vertical*.

2. Confirm that you are running the correct version of Apache Ant. Open a command window and type `ant –version` and press ENTER. You should see the following:

```
C:\>ant -version
Apache Ant version 1.8.1 compiled on April 30 2010
C:\>
```

   If you do not see the Ant version displayed, then something is incorrect and you should recheck the prerequisites section of this document.

3. **If your installation of SAS 9.1.3 SP4 is not in the default location (not C:\Program Files\SAS 9.1)**, then you should perform the following steps:

   Update the BAT file that runs the programs:

   - Edit the file named <cst_temp_dir>\install-913.bat.

- Change the following line to point to the directory in which your version of SAS is installed: `set MAINSASDIR=C:\Program Files\SAS`. This would be the value that was specified above in <sas_install_dir>.

If the value that you entered for <sas913_install_dir> is not the default (SAS 9.1), then you need to perform the following steps:

- Open your home directory. On Windows this directory is C:\Documents and Settings\your_userid.
- Create a file named cstinstall.properties. Add a single line (replacing <sas913_install_dir> with your value: sas.dirpath.winnt.sasFoundation.913=<*sas913_install_dir*>

- Create a file named cstpostinstallconfig.properties. Add a single line (replacing <sas913_install_dir> with your value: this.dirpath.sas.foundation=../../<*sas913_install_dir*>

  Performing the above steps makes sure that the installation scripts and post installation process work correctly.

4 Double click on the `install-913.bat` file.

A window opens that executes the individual Ant installation and configuration files for all the modules. You are asked to enter various pieces of information, sometimes multiple times. This is because the standards are built as individual components with stand-alone installation procedures.

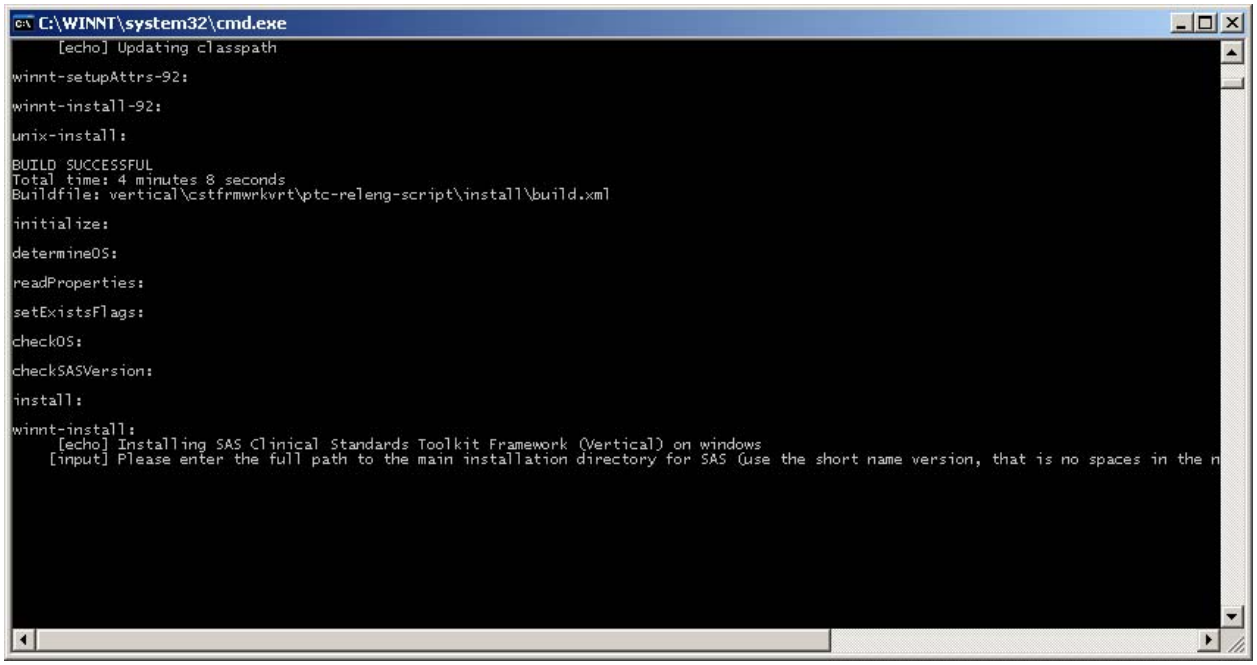
During this time, you see various labels and informational messages scroll on the window, similar to the following:

```
Buildfile: mva\cltoolkt\ptc-releng-script\install\build.xml

initialize:

determineOS:

readProperties:

setExistsFlags:

checkOS:

checkSASVersion:

install:

winnt-install:
     [echo] Installing SAS Clinical Standards Toolkit Framework (MVA) on
windows
    [input] Please enter the full path to the main installation directory
for SAS
```

CST-FRAMEWORK (Base SAS)

5 A prompt asks for the full path to the installation directory for SAS. **If you used the default location (C:\Program Files\SAS), then you can press ENTER and continue**. Otherwise, enter the value for <sas_install_dir>. You see more messages scroll in the window. When the next input is required, you should be able to see a BUILD SUCCESSFUL message approximately 20 lines up in the console.

Figure **1.1** Report Data



CST FRAMEWORK (Vertical, Library Definition)

6 A prompt asks for the full path to the main installation directory for SAS. Use the value that you specified for <sas_install_dir> and press ENTER.

7 A prompt asks for the full path to the location of the SAS Clinical Standards Global Library. The default value C:\cstGlobalLibrary is provided. If you want to use this value, then press ENTER. If not, then enter the value for <global_library_path> and press ENTER.

8 A prompt asks whether you want to skip the initialization of the SAS Clinical Standards Global Library. You should take the default of N by pressing ENTER.

Log lines scroll and you should see SAS execute three times as it cimports the framework tables, initializes the global library, and registers the framework to the global library.

9 Once the next prompt is displayed, you should see a BUILD SUCCESSFUL line farther up in the log.

CDISC SDTM V3.1.2

10 A prompt asks for the full path to the main installation directory for SAS. Use the value that you specified for <sas_install_dir> and press ENTER.

Log lines scroll and you should see SAS execute two times as it cimports the tables and registers the standard to the global library.

CDISC SDTM V3.1.1

11 A prompt asks for the full path to the main installation directory for SAS. Use the value that you specified for <sas_install_dir> and press ENTER.

Log lines scroll and you should see SAS execute two times as it cimports the tables and registers the standard to the global library.

CDISC Terminology 2010-03

12 A prompt asks for the full path to the main installation directory for SAS. Use the value that you specified for <sas_install_dir> and press ENTER.

Log lines scroll and you should see SAS execute two times as it cimports the tables and registers the standard to the global library.

CDISC Terminology 2008-10

13 A prompt asks for the full path to the main installation directory for SAS. Use the value that you specified for <sas_install_dir> and press ENTER.

Log lines scroll and you should see SAS execute two times as it cimports the tables and registers the standard to the global library.

CDISC CRT-DDS V1.0

14 A prompt asks for the full path to the main installation directory for SAS. Use the value that you specified for <sas_install_dir> and press ENTER.

Log lines scroll and you should see SAS execute two times as it cimports the tables and registers the standard to the global library.

CDISC ODM V1.3.0

15 A prompt asks for the full path to the main installation directory for SAS. Use the value that you specified for <sas_install_dir> and press ENTER.

Log lines scroll and you should see SAS execute two times as it cimports the tables and registers the standard to the global library.

The command window disappears.

16 The following post-installation step is required to update two CDISC-SDTM 3.1.2 data sets. Submit the following code to apply these changes.

```
%cstutil_setcstgroot;
libname refcntl
          "&_cstGRoot/standards/cdisc-sdtm-3.1.2-1.3/validation/control";

/*
  Apply corrections to CDISC-SDTM 3.1.2 validation_master data set.
  Installed location: <global standards library directory>/standards/
                      cdisc-sdtm-3.1.2-1.3/validation/control
*/
data work.validation_master;
  set refcntl.validation_master;
  select(checkid);
    when ('SDTM0214') do;
      tableScope='_ALL_-PP';
      substr(uniqueid,14,3)="130";
      substr(uniqueid,24,19)="2010-09-21T12:00:00";
    end;
    when ('SDTM0405') do;
      tableScope='CLASS:FINDINGS-IE-PE-SC-DA-PP';
      substr(uniqueid,14,3)="130";
      substr(uniqueid,24,19)="2010-09-21T12:00:00";
    end;
    when ('SDTM0602')  do;
      columnScope='';
```

```
      substr(uniqueid,14,3)="130";
      substr(uniqueid,24,19)="2010-09-21T12:00:00";
    end;
    when ('SDTM0603') do;
      tableScope='_ALL_-TS';
      substr(uniqueid,14,3)="130";
      substr(uniqueid,24,19)="2010-09-21T12:00:00";
    end;
    when ('SDTM0623') do;
      tableScope='CLASS:FINDINGS-IE-PE+FA';
      substr(uniqueid,14,3)="130";
      substr(uniqueid,24,19)="2010-09-21T12:00:00";
    end;
    otherwise;
  end;
run;

proc sort data=work.validation_master out=refcntl.validation_master
          (label="Validation Checks, Master Superset");
          by checkid standard standardversion checksource;
run;

/*
You should see the following in your SAS log:

NOTE: There were 247 observations read from the data set
WORK.VALIDATION_MASTER.
NOTE: The data set REFCNTL.VALIDATION_MASTER has 247 observations and 21
variables.
*/

/*
  Apply corrections to CDISC-SDTM 3.1.2 validation_domainsbycheck data set.
  Installed location:  <global standards library directory>/
                       standards/cdisc-sdtm-3.1.2-1.3/validation/control
*/

data work.validation_domainsbycheck;
  set refcntl.validation_domainsbycheck end=last;

    * Remove the following 5 records  *;
    if checkid='SDTM0214' and checksource='WebSDM' and
       resultseq=1 and table='PP'
    then delete;
    else if checkid='SDTM0405' and checksource='WebSDM' and
            resultseq=1 and table='DA'
    then delete;
    else if checkid='SDTM0405' and checksource='WebSDM' and
            resultseq=1 and table='PP'
    then delete;
    else if checkid='SDTM0603' and checksource='WebSDM' and
            resultseq=1 and table='TS'
    then delete;
    else if checkid='SDTM0623' and checksource='SAS' and
         resultseq=1 and table='PE'
    then delete;

    output;

    * Add two new records  *;
    if last then do;
      checkid='SDTM0623';
      checksource='SAS';
```

```
      resultseq=1;
      standardversion='***';
      table='FA';
      output;
      table='LB';
      output;
    end;
run;

/*
You should see the following in your SAS log:

NOTE: There were 2019 observations read from the data set
REFCNTL.VALIDATION_DOMAINSBYCHECK.
NOTE: The data set WORK.VALIDATION_DOMAINSBYCHECK has 2016 observations and
5 variables.

*/

proc sort data=work.validation_domainsbycheck
          out=refcntl.validation_domainsbycheck
          (label='Domains tested by each check');
          by checkid checksource resultseq table;
run;

* Rebuild cported.xpt file from modified data sets  *;
filename xptFile
"&_cstGRoot/standards/cdisc-sdtm-3.1.2-1.3/validation/control/cported.xpt";
proc cport lib=refcntl file=xptFile memtype=data;
run;

libname refcntl;
filename xptFile;
```

No errors should be reported in the SAS log and, to verify success of this task, you should see the SAS NOTEs included in the SAS code.

The installation and configuration of SAS Clinical Standards Toolkit is complete.

Advanced: Running the Installation Silently

Running the installation silently means that the script does not stop to ask the user questions. The answers are provided at the time the script is called via command line options. To do this you should complete the following:

1. Create a text file to store the answers. It can be named anything and stored anywhere. This example uses C:\temp\install.properties.
2. Add in the following lines to the file:

```
# Any values need to be escaped.

this.fulldirpath.sas=c\:\\Program Files\\SAS
cstfrmwrkvrt.fulldirpath.cstgroot.temp=c\:\\cstGlobalLibrary

# Recommend that users do NOT skip the initialization
cstfrmwrkvrt.skip.cstgroot.initialize.YN=N
```

   Where the values for the paths are the values <sas_install_dir> and <global_library_path> respectively.

Note: These paths have been escaped. That is, any special characters like "\" and ":" have had a "\" added before them.

3 When you execute step 4 in the above instructions, instead of double clicking on the install-913.bat file, you need to open a command window and change the directory to that location. In the example above, it would be changed to C:\temp\cst-downloadsite. You would then execute the following command:

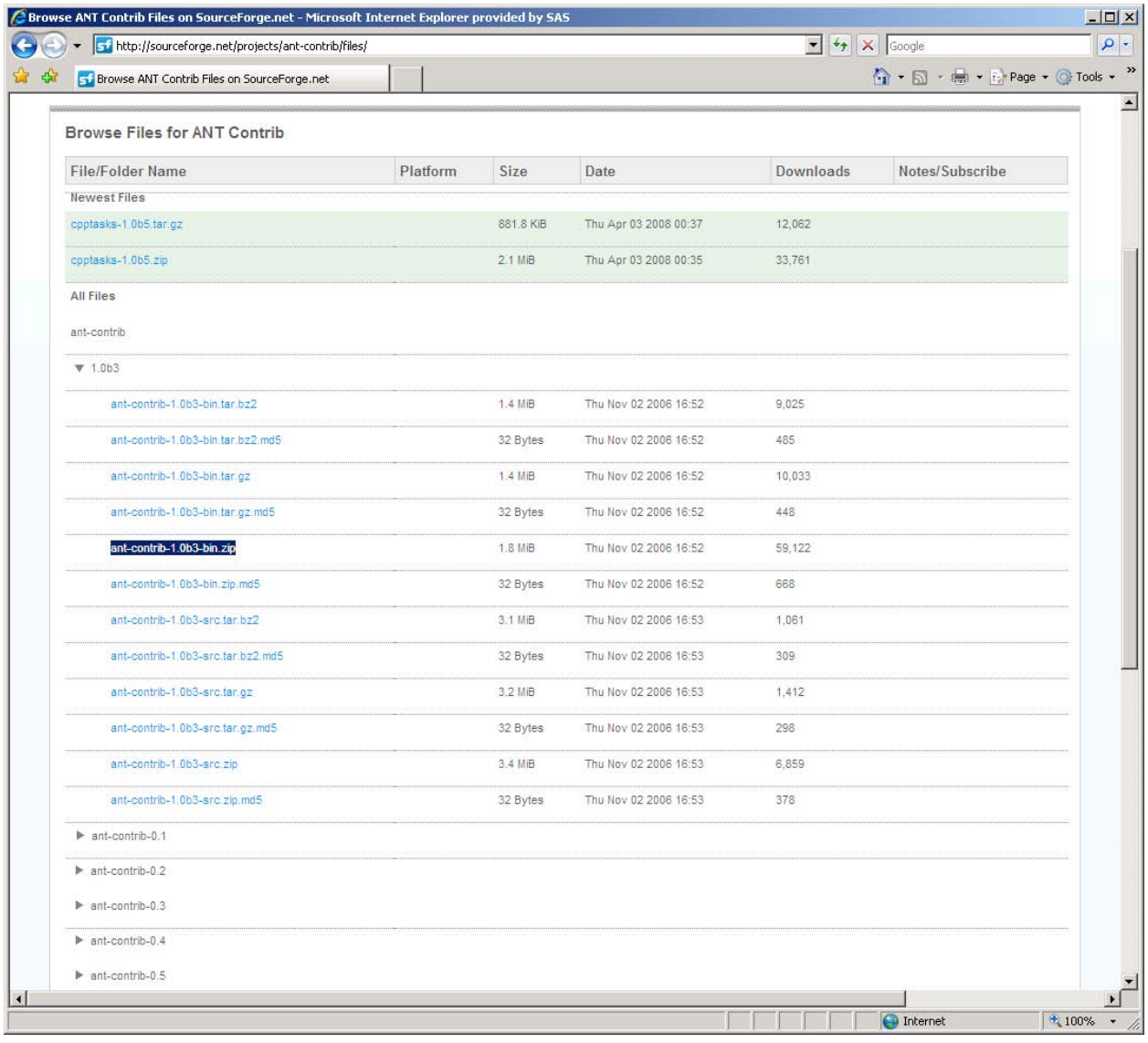
```
install-913.bat -silent "c:\temp\install.properties"
```

This command runs the installation in silent mode and you do not need to provide interactive input.

Display

The following shows an Ant Contrib download page at the time this document was written with the precompiled version highlighted.

Figure **1.2** Ant Contrib Download Page



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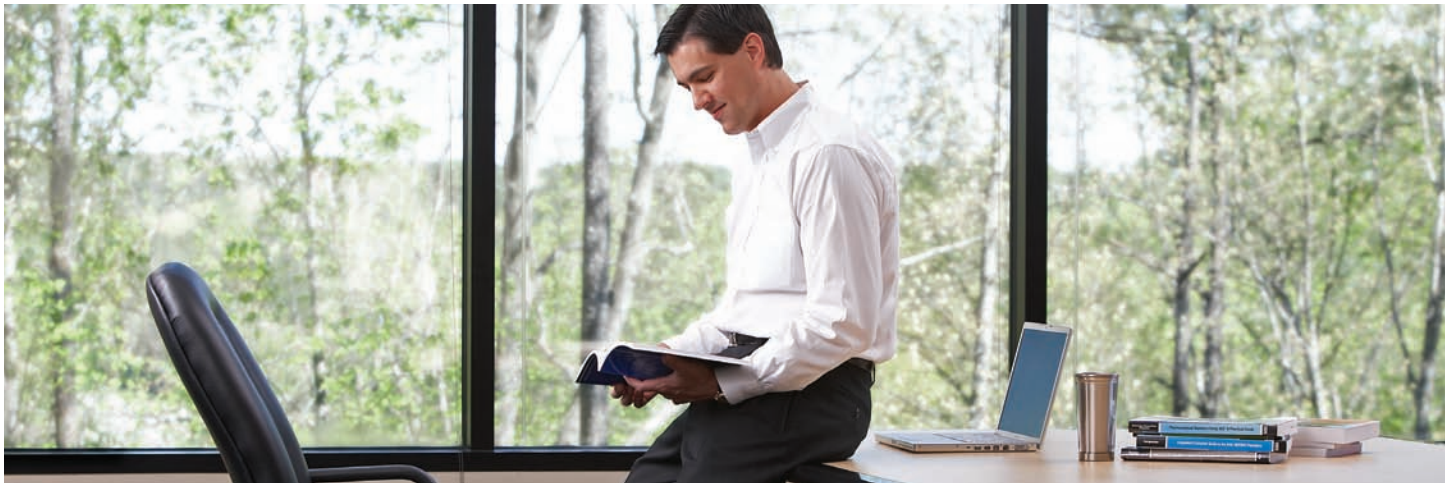

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