

Frequently Asked Questions about Installation and Execution of IVEware v0.3

IVEware Support Team, August 28, 2020

These FAQ's represent the most frequent questions we receive about installation and execution of IVEware v0.3. Most of the information here is also included in our documentation on the website. We assume you are using a Windows installation but Linux and Mac are other possibilities, see the website for documentation. We also use IVEware with SAS as this is the most common pairing of tools but the concepts would apply to other software pairings.

We also receive many questions about previous versions (0.1 and 0.2) but focus on just the latest version in this document. Most questions will still pertain to the previous versions.

Questions about Installation/Setup/Examples of IVEware Version 0.3

Q. I am not sure where IVEware is installed, how can I find the program?

A. For Windows, the default directory for the installation is "C:\Program Files (x86)\Srclib", but you can put it wherever you want it. The location you choose will replace "~/srclib" in the guides for using IVEware with R, SAS, SPSS, Stata and Srcware. The installer will create a desktop icon unless you tell it not to. For Linux or Mac, see the website for similar documentation.

Q. I am not sure about how to alter the "settings.xml" file. What is this file and how should I change it?

A. This file allows you to run external software with IVEware using the XML or SRCShell editor. It is located in the default directory SRCLIB. If you plan to use Srclib with R, SAS, SPSS or Stata and the version you want can't be invoked by its lower-case name, edit the Srclib\settings.xml file to provide the correct path. You can get the correct path from the properties of the desktop icon for the software.

Q. How do I run the Examples provided with IVEware?

A. To verify that Srclib is installed correctly, download the ive_examples_windows.zip file, extract the Examples directory into an appropriate parent directory, for example, "Documents". You can put it wherever you want it. We recommend changing your working directory to the location of the Examples for use. For example, if you install the Examples in 'E:\examples' and are using SAS, change the working directory for your SAS session to this directory. This makes accessing the files easier overall.

Questions about Running IVEware within SAS

Q. I am trying to run part of the Examples code within SAS. It seems that SAS doesn't recognize the "%impute" macro. The partial Log is attached in red below but what is the problem?

```
options set = SRCLIB 'C:\Program Files (x86)\Srclib\sas' sasautos = (!SRCLIB' sasautos) maautosource;
/* iveware examples - sas version */
/* import the input datasets */
proc import datafile='G:\ive_examples_windows\Examples\mydata2.txt' out=mydata2 dbms=tab
replace;
getnames=yes;
run;
/* run iveware */
/* multiple imputation */
%impute(name=impute,dir=.,setup=new)
title Multiple imputation;
datain mydata2;
dataout impute;
default continuous;
categorical casecnt gender race3 hyper diab smoke fammi edusubj3 cholesth;
mixed cafftot alcohol3;
transfer studyid;
restrict numcig(smoke=2,3) yrssmoke(smoke=2,3);
bounds numcig(>0) yrssmoke(>0,<=age-12) fatindex(>0) cafftot(>=0) alcohol3(>=0);
maxpred redtot(3) wgtkg(2);
minrsqd .01;
iterations 5;
multiples 5;
seed 2001;
run;
```

NOTE: WORK.MYDATA2 data set was successfully created.

NOTE: The data set WORK.MYDATA2 has 898 observations and 21 variables.

NOTE: PROCEDURE IMPORT used (Total process time):

real time	0.16 seconds
cpu time	0.15 seconds

WARNING: Apparent invocation of macro IMPUTE not resolved.

1393 /* run iveware */

1394

1395 /* multiple imputation */

1396

1397 %impute(name=impute,dir=.,setup=new)?

-

180

ERROR 180-322: Statement is not valid or it is used out of proper order.....(more log)

A. The problem is that when executing IVEware within SAS, use of the REGULAR PROGRAM EDITOR is required; not the ENHANCED PROGRAM EDITOR! This is one of the most common mistakes we see with IVEware run within SAS. Double check the icon at the top left of the program editor of SAS and make sure there is no "blue cross" meaning regular editor not enhanced.

Q. I am trying to run the Examples code below but I am not obtaining any results from IVEware. What is wrong?

```
options set = SRCLIB 'e:\SrcLib\' sasautos = (!SRCLIB' sasautos) maautosource;

/* iveware examples - sas version */
/* import the input datasets */
proc import datafile='E:\IVE Examples\Examples\mydata2.txt' out=mydata2 dbms=tab
replace;
getnames=yes;
run;

/* run iveware */
/* multiple imputation */
%impute(name=impute,dir='e:ive examples\examples',setup=new)
title Multiple imputation;
datain mydata2;
dataout impute;
default continuous;
categorical casecnt gender race3 hyper diab smoke fammi edusubj3 cholesth;
mixed cafftot alcohol3;
transfer studyid;
restrict numcig(smoke=2,3) yrsmoke(smoke=2,3);
bounds numcig(>0) yrsmoke(>0,<=age-12) fatindex(>0) cafftot(>=0) alcohol3(>=0);
maxpred redtot(3) wgtkg(2);
minrsqd .01;
iterations 5;
multiples 5;
seed 2001;
run;
```

A. The problem is the lack of 'SAS' in the options statement. In Version 0.3, the SAS directory is needed on the options statement. It should be:

options set = SRCLIB 'e:\SrcLib\SAS' sasautos = (!SRCLIB' sasautos) maautosource;

Q.I am running IVEware with SAS (using the Regular Program Editor) with the DIAGNOSE option but cannot find the plots though there is information about them in the log (see below). When I look in the appropriate directory, I don't see any .png files. Why are my plots not being produced?

Code Example

```
%impute(name=impute_subset, dir=., setup=new)
title Multiple imputation with Subset;
datain drive_sub ;
dataout selfive1 all ;
default continuous;
categorical tsex audlifbft1 AUDbf_t5 AUDbm_t5;
transfer target;
iterations 5;
multiples 5;
seed 2001;
diagnose bingedkt4 ;
run;
```

Log Snippet

```
C:\Users\impute_p002.png
```

A. Even though it seems that IVEware is producing a plot, unless you have installed the GNUPLOT software on your computer, the plots are not produced. See <http://www.gnuplot.info/> for download and information. Once the software is installed, the plots will be produce, assuming all code is correct.

Questions about Running IVEware with the XML Editor and SAS

Q. I am trying to run the impute section of the IVEware Examples in SAS with the XML (or SRCShell) editor but SAS doesn't open and run the code. What is wrong?

```
<sas name="ive_examples">
/* iveware examples - sas version */
/* import the input datasets */
proc import datafile='mydata2.txt' out=mydata2 dbms=tab replace;
getnames=yes;
run;

/* run iveware */
/* multiple imputation */
<impute name="impute">
title Multiple imputation;
datain mydata2;
dataout impute;
default continuous;
categorical casecnt gender race3 hyper diab smoke fammi edusubj3 cholesth;
mixed cafftot alcohol3;
transfer studyid;
restrict numcig(smoke=2,3) yrssmoke(smoke=2,3);
bounds numcig(>0) yrssmoke(>0,<=age-12) fatindex(>0) cafftot(>=0) alcohol3(>=0);
maxpred redtot(3) wgtkg(2);
minrsqd .01;
iterations 5;
multiples 5;
seed 2001;
run;
</impute>
</sas>
```

A. The likely problem is that your settings.xml file (in the Srclib directory) has not been correctly set to match the path of your SAS installation. For example, the sample settings.xml file (below) has to match your particular SAS path for your computer and may differ from what is provided by the IVEware software:

```
<settings>
<frameworks>
<gnuplot path="C:\Program Files (x86)\gnuplot\bin\wgnuplot.exe" />
<r path="C:\Program Files\R\R-3.2.1\bin\x64\R.exe" />
<sas path="C:\Program Files\SASHome\SASFoundation\9.4\sas.exe" />
<spss path="C:\Program Files\IBM\SPSS\Statistics\22\stats.exe" />
<stata path="M:\stata14SE-64bit\StataSE-64.exe" />
</frameworks>
</settings>
```

Questions about Features of IVEware Not Running Correctly

Q. I am running IVEware with SAS and the XML editor and am getting a message that says: "Imputation too Big, Possibly Continuous Variable Listed as Categorical". What is wrong?

Code Example

```
<sas name="ive_faq">
/* multiple imputation */
<impute name="impute_faq">
title Multiple Imputation;
datain ncsr ;
dataout impute all;
categorical age ed4cat ;
continuous bmi hhinc ;
transfer studyid;
iterations 5;
multiples 5;
seed 1955;
run;
</impute>
</sas>
```

- A. *The problem is that age is declared as a categorical rather than continuous variable and the program uses each discrete category of age (17-99 in this survey) as a separate level. Change age to a continuous variable and if this is the only misspecified variable, the problem should be resolved.*

Questions about Imputation and Analysis Code/Setup

Q. I plan to use IVEware to multiply impute values for data with biomarkers. There are three types of missing: 1) truly missing values (because of laboratory issue), 2) values below lower LOQ (LLOQ), and 3) values above upper LOQ (ULOQ). I would like to impute values for all three cases, but for the latter two cases I would like to specify specific bounds for the imputation ($0 < \text{values below LLOQ} < \text{LLOQ}$), and a lower bound for values above ULOQ ($\text{ULOQ} < \text{values above ULOQ} < \text{some reasonable value}$). Can IVEware allow users to specify different bounds for the same variable, given different types of missing?

*A. Yes. Create two variables, say LB and UB, which define lower bound and upper bound for each subject. For observed and those with truly missing values it will be 0 for the lower bound and upper bound as some reasonable value. For other types of missing values, you can set the upper and lower bounds as you describe. Use the Bounds feature to specify: **Bounds var ($\geq LB, \leq UB$);***

Also, make sure that LB and UB are included as Transfer variables so that they are not used as predictors.

Q. I am trying to do a simulation based on different datasets with missing variables. I am running IVEware with R and wonder if I could do this in one IVEware shell script along with an R script? Right now, I would have to save/open/run R for each data set which means when I run simulation for 500 datasets, I have to run the shell script and open R 500 times. I wonder if there is a way to do this more efficiently?

A. In our book, "Multiple Imputation in Practice", we have a section that describes how to run the simulation using IVEware. You can generate all of the data sets once, use the "by" feature to multiply impute and analyze using the "BY" feature of IVEware.