This information replaces the install information found in the User Reference Documentation, pages 3-6.

Installing the Macros

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Overview

This document describes how to install the SAS Drug Development macros, which are distributed in the file SASDrugDevRemoteAPI_Macros.zip.

Requirements

The following software is required by the SAS Drug Development macros:

- SAS 9.1.3 Service Pack 4
- Java Runtime Environment Version 1.4.2_09 or later, but not Version 1.5.0 or later
- SAS Drug Development 3.4 remote API client

Installation Instructions for Microsoft Windows

1. Unzip the contents of SASDrugDevRemoteAPI_Macros.zip to **`C:\`**.

   This creates the following files and folder in **`C:\`**:

   - **`SASDrugDevRemoteAPI_Macros\sddmacros.cfg`**
   - **`SASDrugDevRemoteAPI_Macros\sasv9_local.cfg`**
   - **`SASDrugDevRemoteAPI_Macros\version.txt`**
   - **`SASDrugDevRemoteAPI_Macros\lib\sas-drugdev-sasmacros.jar`**
   - **`SASDrugDevRemoteAPI_Macros\lib\log4j.properties`**
   - **`SASDrugDevRemoteAPI_Macros\sasmacro`**
     This is the folder that contains the SAS Drug Development macros as .sas files.

2. Review the properties of the shortcut that starts SAS to ensure that the shortcut includes the option that points to the configuration file **`!sasroot\sasv9_local.cfg`**.

   For example:

   ```
   -CONFIG "C:\Program Files\SAS\SAS9.1\sasv9_local.cfg"
   ```

   Note: The default location for SASROOT is **`C:\Program Files\SAS\SAS9.1`**.

3. Edit the file **`!sasroot\sasv9_local.cfg`** by adding the following line:

   ```
   -CONFIG "C:\SASDrugDevRemoteAPI_Macros\sddmacros.cfg"
   ```

4. If the SAS Drug Development remote API client is installed in a location other than **`C:\SASDrugDevRemoteAPI`**, you must edit the file sddmacros.cfg as follows:

   Caution: Back up this file before you edit it. Use extreme care when editing this file. If you have any questions, concerns, or problems, contact your on-site SAS support personnel.

a. Modify the -JREOPTIONS statement by editing the option -Dsas.app.class.dirs to include the absolute path to the **lib** folder in the SAS Drug Development remote API client installation and **C:\SASDrugDevRemoteAPI_Macros\lib**.

b. If you are connecting to an instance of SAS Drug Development that is hosted by SAS, and you are behind a firewall and proxy servers, you might need to address proxy requirements or restrictions.

   If HTTPS traffic is proxied, specify the following Java system properties in the -JREOPTIONS statement to configure the Java runtime environment:

   ```
   -Dhttps.proxyHost=<proxy-host-name> -Dhttps.proxyPort=<port-number>
   ```

Caution: Modify only these options. Ensure that you do not insert any carriage returns in the sas.app.class.dirs option.

The -JREOPTIONS statement (when using a proxy server) will look similar to the following when you are finished:

```
-JREOPTIONS=(
-
Dsas.app.class.dirs=C:\RemoteAPI\lib;C:\SASDrugDevRemoteAPI_Macros\l
ib
-Dsas.javaobj.experimental=no
-Dhttps.proxyHost=yourProxyServer.sas.com
-Dhttps.proxyPort=8080)
```

5. Edit the file **!sasroot\nls*language*\sasv9_local.cfg** (where ***language*** is the language used by SAS, such as **en** for English) to change the -SET SASAUTOS statement to include the folder **C:\SASDrugDevRemoteAPI_Macros\sasmacro**.

   For example:

   ```
   -SET SASAUTOS ("C:\SASDrugDevRemoteAPI_Macros\sasmacro")
   ```

Installation Instructions for UNIX

1. Create a directory under **!SASROOT** called **RemoteAPI**. For the purposes of these instructions, **!SASROOT** will be referred to as **/apps/sas9.1.3**.
2. Unzip the contents of SASDrugDevRemoteAPI_Macros.zip to **/apps/sas9.1.3/RemoteAPI/**.

   This creates the following files and folder in **/apps/sas9.1.3/RemoteAPI/**:

   - **SASDrugDevRemoteAPI_Macros/sddmacros.cfg**
   - **SASDrugDevRemoteAPI_Macros/sasv9_local.cfg**
   - **SASDrugDevRemoteAPI_Macros/version.txt**
   - **SASDrugDevRemoteAPI_Macros/lib/sas-drugdev-sasmacros.jar**
   - **SASDrugDevRemoteAPI_Macros/lib/log4j.properties**
   - **SASDrugDevRemoteAPI_Macros/sasmacro**
     This is the folder that contains the SAS Drug Development macros as .sas files.
3. To install the SAS Drug Development remote API client, unzip the contents of SASDrugDevRemoteAPI.zip to a temp area on the UNIX server. This will create a SASDrugDevRemoteAPI directory. Copy all the jars in SASDrugDevRemoteAPI/lib to /apps/sas9.1.3/RemoteAPI/SASDrugDevRemoteAPI_Macros/lib.
4. Modify the access permissions of the !SASROOT/RemoteAPI directory recursively to match the access permissions of the user ID and group that installed and runs SAS.

   For example: chown –R sasadmin:sasadmin /apps/sas9.1.3 /RemoteAPI
5. Edit the file **!SASROOT/sasv9_local.cfg**:

Caution: Back up this file before you edit it. Use extreme care when editing this file. If you have any questions, concerns, or problems, contact your on-site SAS support personnel.

Add in the JREOPTIONS statement so that it looks like the following example:

-JREOPTIONS=(

```
-Dsas.app.class.dirs=/apps/sas9.1.3/RemoteAPI/SASDrugDevRemoteAPI_Ma
cros/lib
-Dsas.javaobj.experimental=no
)
```

If you are connecting to an instance of SAS Drug Development that is hosted by SAS, and you are behind a firewall and proxy servers, you might need to address proxy requirements or restrictions.

If HTTPS traffic is proxied, specify the following Java system properties in the -JREOPTIONS statement to configure the Java runtime environment:

```
-Dhttps.proxyHost=<proxy-host-name> -Dhttps.proxyPort=<port-number>
```

Caution: Modify only these options. Ensure that you do not insert any carriage returns in the sas.app.class.dirs option.

The -JREOPTIONS statement will look similar to the following when you are finished:

```
-JREOPTIONS=(
-Dsas.app.class.dirs==/apps/sas9.1.3/RemoteAPI/SASDrugDevRemoteAPI_M
acros/lib
-Dsas.javaobj.experimental=no
-Dhttps.proxyHost=yourProxyServer.sas.com
-Dhttps.proxyPort=8080)
```

6 Edit the file **`!SASROOT/sasv9.cfg`** to change or add the -SASAUTOS statement to include the path to the SAS Drug Development macros.

For example:

```
-sasautos ('!SASROOT/sasautos'
'/apps/sas9.1.3/RemoteAPI/SASDrugDevRemoteAPI_Macros/sasmacro')
```

Note: You might need to enclose existing SASAUTOS settings in quotation marks.

Verifying the Installation

The following SAS code displays the settings for the -JREOPTIONS and verifies that the JRE is configured properly. It does not verify that the SAS Drug Development macros are installed properly.

```
proc javainfo; run;
```

The following SAS code verifies that the SAS Drug Development macros are installed. Replace ***`sdd-instance`***, ***`sdd-user-ID`***, and ***`sdd-password`*** with values that reflect your instance of SAS Drug Development.

```
options mprint;
proc javainfo;
run;

%sasdrugdev_login(url=%str(https://sdd-
instance/sddremote/),sdduserid=%str(sdd-user-ID),sddpassword=%str(sdd-
password))

/* List the contents of the root folder in SDD */
%sasdrugdev_getobjects(sddpath=/SDD)

proc print;
```

```
  title "List of Objects in /SDD";
run;

%sasdrugdev_logout
```

The code should generate a list of the contents of the root folder in the SAS Drug Development repository.

Note: By default, the root folder in the SAS Drug Development repository is **`/SDD`**. If the root of your SAS Drug Development repository is different, change **`/SDD`** in the code above.

The SAS log will contain information that might be useful for debugging the installation of the SAS Drug Development macros.

If you have problems connecting to SAS Drug Development, add the debugging parameters to **`%sasdrugdev_login()`**: DEBUGLOG and DEBUGLEVEL.

For example:

```
%sasdrugdev_login(url=%str(https://sdd-
instance/sddremote/),sdduserid=%str(sdd-user-ID),sddpassword=%str(sdd-
password),debuglog=absolute-path-to-log,debuglevel=DEBUG)
```