

Automating a SAS® 9.4 Installation without Using Provisioning Software: A Case Study Involving the Setup of Machines for SAS Regional Users Groups

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ABSTRACT

Whether you manage computer systems in a small-to-medium environment (for example, in labs, workshops, or corporate training groups) or in a large-scale deployment, the ability to automate SAS® 9.4 installations is important to the efficiency and success of your software deployments. For large-scale deployments, you can automate the installation process by using third-party provisioning software such as Microsoft System Center Configuration Manager (SCCM) or Symantec Altiris. But what if you have a small-to-medium environment and you do not have provisioning software to package deployment jobs?

No worries! There is a solution. This paper presents a case study of just such a situation where a process was developed for SAS regional users groups (RUGs). Along with the case study, the paper offers a process for automating SAS 9.4 installations in workshop, lab, and corporate training (small-to-medium sized) environments. This process incorporates the new **-srwonly** option with the SAS® Deployment Wizard, deployment-wizard commands that use response files, and batch-file implementation. This combination results in easy automation of an installation, even without provisioning software.

INTRODUCTION

This paper shows you how to develop an automated installation for SAS® 9.4 without using provisioning software. Through a series of steps that include light preparation, you can accomplish a working, effective SAS® installation. You can use the techniques in this paper in a variety of settings from lab environments to training and workshop environments.

This paper provides methods, techniques, and steps that enable you to perform an automated SAS 9.4 deployment without using provisioning software. You do not need advanced IT skills to take advantage of this process. The techniques that are discussed can be used by anyone with basic-to-intermediate IT skills. After reading this paper, you should understand how to automate a SAS 9.4 installation and gain the time-savings benefit of using an uncomplicated, quiet deployment.

PREREQUISITES

HARDWARE

The following hardware specifications are required in order to use the techniques that are discussed in this paper.

- **System processor:** Processors that are either Intel 64 or that are compatible with Intel 64 that have a minimum of four cores.
- **Random-access memory (RAM):** - 8 GB of RAM.
- **Swap space:** Swap space (or paging space) should be 1.5 times the amount of physical RAM.
- **Monitor:** For a monitor, the case study used a minimum standard of SVGA or better.

Note: Be sure to observe these hardware requirements in order to obtain the expected results.

SOFTWARE

The software requirements that are used in the RUG case study include the following SAS® software products:

- Base SAS® software
- SAS® BI Server
- SAS® Enterprise Guide
- SAS/ACCESS® Interface to PC Files
- SAS/STAT® software

These software products are detailed in the sections that follow.

Note: Be sure to observe these software requirements in order to obtain the expected results.

FILENAME CONVENTION

At the time of this writing, SAS® 9.4 requires the 8.3 filename convention (also known as the *short-name convention*) as a system requirement. If the short-name convention is not present (that is, only the long-name convention is available), problems can occur in later use of the software. Both short-name and long-name conventions are used in the case-study.

Note: The 8.3 filename convention might be phased out in a future SAS® release.

ANTI-VIRUS SOFTWARE

SAS Technical Support recommends that you stop your anti-virus software and any related services during installation time. If you do not stop your anti-virus software during the installation, problems can occur that might prevent a successful installation. You can restart the antivirus software after the installation is complete. Antivirus software and its services are stopped during installation time on the case study machines.

USER ACCOUNT CONTROL

SAS Technical Support recommends that you disable user account control (UAC) during the installation time. You can restart UAC after the installation is complete. UAC is disabled during installation in the case study.

OPERATING SYSTEM

The case study uses the Windows 7 x64 operating environment. In particular, all RUG environment machines are under Windows 7 Enterprise x64 with Service Pack 1.

MICROSOFT OFFICE

The RUG environment requires either 64-bit Microsoft Office 2010 or 64-bit Microsoft Office 2013.

SAS® SYSTEM REQUIREMENTS

There are particular system software requisites that must be present on a machine in order for SAS software to function properly. The specific requirements for SAS can vary from machine to machine, and they also depend on the particular product mix of SAS software that you install. In the case study, all machines are in the same operating environment. Therefore, the SAS system requirements are the same for each machine. If the SAS System requirements are not present, functionality problems will occur in the resulting installation.

SAS® 9.4 –SRWONLY COMMAND-LINE OPTION

The first maintenance release for SAS 9.4 (TS1M1), Rev. 940_14w11 introduced a new command-line option, **-srwonly**, which enables you to install only the SAS system requirements or to create a batch (BAT) file for later use. The basic **-srwonly** command is as follows:

```
setup.exe -srwonly
```

The BAT file that is created installs the system requirements for the installation, based on the SAS software that you select. After you create the BAT file, a portion of it is used later to modify and construct another BAT file that executes the full installation.

For detailed instructions about using the **-srwonly** command, see the section "Checking System Requirements (Windows only)" in "Chapter 3 – SAS Deployment Wizard: Command Line Options" of the *SAS® Deployment Wizard and SAS® Deployment Manager 9.4: User's Guide*. (support.sas.com/documentation/installcenter/en/ikdeploywizug/66034/PDF/default/user.pdf)

CERTIFIED ENVIRONMENT FOR THE CASE STUDY

The certified environment for the case study includes the following:

- Windows 7 Enterprise x64, Service Pack 1
- Microsoft Office 2013, 64-bit
- Internet Explorer 9, 32-bit
- SAS 9.4 TS1M1, Rev. 940_14w14

For this particular case, this environment was required. Without these specific components, functionality is not guaranteed based on the process described in this paper.

PREPARING FOR THE SAS® INSTALLATION

The ultimate goal for the case study was the successful automation of the SAS installation on RUG conference machines. As mentioned earlier, this same process can be used for machine setups in small-to-medium sized lab, training, or workshop environments.



For this particular project, the author created multiple files that automate many of the steps in the process. All of the associated files (BAT, TXT, and DOCX) were placed in a folder named **RUG**. This folder was then converted to a ZIP file named **RUG.zip**.

The **RUG.zip** file and a set of instructions were provided to the installers responsible for setting up the RUG machines.

The instructions provided the following general steps for setting up a SAS 9.4 installation for a hands-on conference workshop:

1. Download the **RUG.zip** file from
[ftp://ftp.sas.com/techsup/download/blind/RUG.zip](http://ftp.sas.com/techsup/download/blind/RUG.zip).
2. Extract the ZIP file to **C:**, which results in a **C:\Rug** folder.
3. Review the **READMEFIRST.txt** file and then continue.

Note: If you want to run your own setup process, you can follow these same instructions and access the **RUG.zip** file from the FTP link above.

The **C:\RUG** folder provides easy-to-use files (all in one location) that handle a lot of the manual work, without human interaction, for a quiet installation on multiple machines. The **C:\RUG** folder contains the following files, which are referenced later in this paper:

- createsasaccount.bat
- doit.bat
- installdotnet.bat
- installsas - Copy.txt
- installsas.txt
- plan.xml
- READMEFIRST.txt
- resetsasaccounts01.bat
- resetsasaccounts02.bat
- RUG Instructions for Setting Up Workshop Machines.docx
- undoit.bat
- uninstallsas.txt
- Using Workshop Machines at RUG Conferences.docx

The steps in the process that follows were derived to work for multiple RUG events since each event uses its own set of hands-on workshop machines. With this mind, it is necessary for one of the steps ([step 2](#) in the section "Step 2: SAS Software Installation") to require additional preparation work because each respective RUG event owns an individual SAS 9.4 software order and license. Because you might do work specifically for a single event or lab environment (rather than multiple events or environments), there is one step that you can modify to facilitate less preparation work. This step will be pointed out later in the paper.

STEP 1: SETTING UP PREDEPLOYMENT COMPONENTS

The following steps help you to set up required accounts, a SAS Software Depot, and the Microsoft .NET Framework that are required for SAS software installation.

Note: The steps in this section might be accomplished by your own install team or by a third-party vendor, depending on your particular situation. As such, vendor-related notes are made throughout the section where they are applicable.

1. Create a local account called **sas** and add it to the **Administrators** group, as follows:
 - a. Run the createsasaccount.bat (located in **C:\RUG**), as follows:
 1. Log on to your Windows environment with an administrative account.
 2. Right-click the createsaccount.bat file in **C:\RUG** and select **Run as administrator**.
 - b. Log off. Then log on again with the **sas** account. The password for the account is **Password1**.

You should perform all of the remaining steps with the local **sas** account.

Note: All local accounts that are created use the same password: **Password1**.

(list continued)

2. Create a SAS Software Depot, as follows:
 - a. Download the SAS® Download Manager from support.sas.com/downloadmgr. You need a SAS web profile (logon profile) to access and use the SAS Download Manager. If you do not have a web profile, create one from the form that is presented.
 - b. After you log on, select either of the Microsoft Windows SAS Download Managers (Windows or Windows for x64).
 - c. Run SAS Download Manager to begin downloading the order. You can run the executable file directly from the web site. Or you can save the executable file to your machine and then run it.
 1. When you are prompted by the download manager, enter the order number and SAS installation key that you have been provided with in your Software Order E-mail (SOE)
 2. Then click **OK** to begin the download.

Note: The download process can take more than an hour. So be patient, and let the process finish. Download the complete order. Do not subset anything in the order during the download.

3. Copy the plan file (**C:\RUG\plan.xml**) to an appropriate location (for example, **C:\SAS Software Depot\plan_files**).



A plan file was created by SAS for the particular SAS product mix for the RUG event in this case study. A plan file is not always necessary. However, the RUG environment installation in the case study was enhanced by the use of a plan file.

4. Copy your software depot to other machines, as necessary. For multiple machines, you can copy the **C:\SAS Software Depot** directory to other workshop machines so that you do not have to repeat the actual downloading process on each machine.

Note: The RUG workshop environments do not typically have internet connections. As a result, a SAS Software Depot must reside on each machine. However, if your environment has a network drive on which to house the depot, then each machine does not require a local depot.

Whether you download the initial depot to a network drive, a local computer, or a portable USB flash drive, you should use the SAS Deployment Wizard native tooling, as explained in the following steps, to copy or duplicate the depot to other machines. Do not use either the copy-and-paste or drag-and-drop methods.

- a. Execute the setup.exe file that resides in the **C:\SAS Software Depot** directory. This command opens the **Select Deployment Task** page in the wizard.
- b. On the **Select Deployment Task** page, select the option **Create or Add to a SAS Software Depot** to duplicate a SAS Software Depot.

This method of duplication is less time consuming than downloading the depot again.

Important Notes:

- Each machine should have a local **C:\SAS Software Depot** folder, which contains the plan.xml file in the **plan_files** subfolder.

(list continued)

- Each machine should have a local **C:\RUG** folder.
- If you have the plan.xml file in the **plan_files** folder of the original depot, the plan.xml file is not carried over in the duplication process. Therefore, you must copy **C:\RUG\plan.xml** to the **C:\SAS Software Depot\plan_files** directory.

Vendor Note: Read this note only if you use imaging software where you create a master Microsoft Windows image that is then propagated to multiple machines. You can save depot-creation time by including the **C:\SAS Software Depot** folder (which contains the plan.xml file in the **plan_files** subfolder) and also the **C:\RUG** folder in the master image. The **Installing SAS Software** section of the wizard must be performed on each machine, not on the master image.

5. Install the Microsoft .NET Framework by right-clicking **C:\RUG\installdotnet.bat** and selecting **Run as administrator**. This step ensures that both Microsoft .NET Framework 3.5 Service Pack 1 and Microsoft .NET Framework 4.0 are installed. Run this step even if you think both are already installed. Be aware that the .NET Framework installation can take a while to complete. When this step is finished, **reboot the machine**.

Vendor Note: Read this note only if you use imaging software where you create a master Microsoft Windows image that is then propagated to multiple machines. You should include the Microsoft .NET Framework installation in the master image. The **Installing SAS Software** section of the wizard must be performed on each machine, not on the master image.

STEP 2: INSTALLING SAS® SOFTWARE

The steps in this section install your SAS software. Perform all of the remaining steps using the local **sas** account. As mentioned earlier, all local accounts that are created have the same password: **Password1**.

1. Prepare the installsas.txt file by **ensuring that the value for the *computername* parameter is correct**.



For the case study, the **-record** option was used to create a prerecorded response file, installsas.txt, that was provided to the Regional User Group. Details about the **-record** option are available in "Chapter 3—SAS Deployment Wizard: Command-Line Options" of the *SAS® Deployment Wizard and SAS® Deployment Manager 9.4: User's Guide*.

Preparing the installsas.txt file with the correct computer name entries is necessary in order to set up the external accounts properly for installation and use. The external accounts are created later in another step.

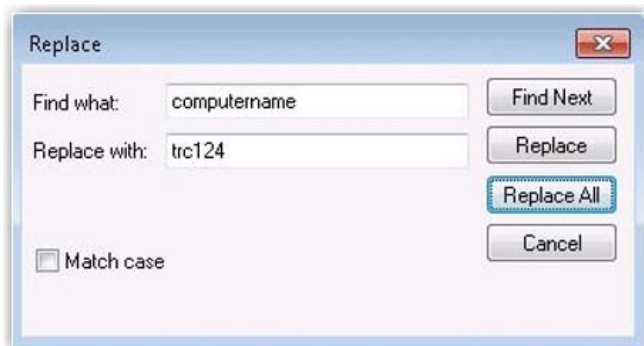
Note: Because each machine has a unique computer name, you must perform steps a – f below for each individual machine.

In the installsas.txt file, locate and replace **computername** with the actual computer name, as follows:

1. Open **C:\RUG\installsas.txt** in the Windows Notepad application.
2. Select **Edit ► Replace** to open the Replace dialog box.
3. In the **Find what** text box, enter the term **computername**.

(list continued)

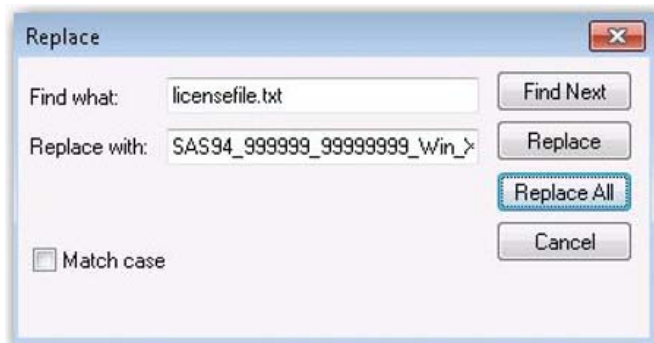
4. In the **Replace with** text box, enter the short computer name. This value is the actual computer short name. For example, if the long name is trc124.trc.sas.com, then the short name is trc124.



5. Click **Replace All** and exit the Replace dialog box.
 6. Select **File ► Save**. Then select **File ► Exit**. This final step modifies the information for external accounts: the SAS installer account, the SAS Spawned Servers account, and the First User account.
2. **Ensure that the value for the SAS_INSTALLATION_DATA= parameter is correct.**

The *SAS Installation Data (SID) file*, often referred to as the license file, must be correct. You need to replace a file named licensefile.txt (from the RUG.zip file) with the appropriate SID filename, as follows:

- a. Re-open installsas.txt in Notepad.
- b. Select **Edit ► Replace** to open the Replace dialog box.
- c. In the **Find what** text box, enter **licensefile.txt**.
- d. In the **Replace with** text box, enter the actual license filename (for example, **SAS94_999999_99999999_Win_X64_Wrkstn_Srv.txt**) that appears in the **sid_files** folder of your SAS Software Depot.



- e. Click **Replace All** and exit the Replace dialog box.
- f. Select **File ► Save**. Then select **File ► Exit**.

Note: This entire step (step 2) is the step mentioned earlier (in the section [Preparing for the SAS® Installation](#)) as a step that must be done at least once and that can reduce the

preparatory work for your own homogeneous environment. After you include the correct license file in the installsas.txt file, you can use that same license file on subsequent machines for which you have correctly modified the [computer name](#) in installsas.txt.

3. Verify the changes you made to the installsas.txt file.

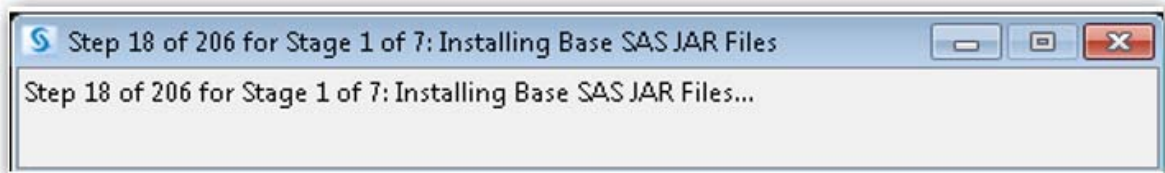
Open installsas.txt with Notepad one final time to verify that there is no instance of **computername** or of the filename **licensefile.txt**. It is important to make sure these modifications are correct. Once you verify the file, close installsas.txt.

Important: As noted previously, you only have to perform the licensing modification once. Then you can use that modified file for all of your machines. However, the step for updating the computer name has to be performed on each individual machine because the name is different for each machine.

4. Deploy the installation by right-clicking the doit.bat file and selecting **Run as administrator** to execute the file.

Important: Do not close the CMD window of the BAT file. It closes automatically and the silent-status dialog box appears. The installation is complete when the silent-status dialog box disappears.

A brief pause occurs before the installation begins. Then a silent-status dialog box appears. The silent-status display below shows a process of 206 steps. Your installation might have more steps or fewer steps than the example. The process can contain as many as 200+ steps during the installation, so be patient and let the installation complete.



In the case study, a pre-built BAT file named doit.bat was provided to the RUG group. This BAT file comprises four main functions:

- The doit.bat file creates necessary users and groups that are required for the installation process. The users and groups are created by the following code module:

```
echo on

net user sasdemo Password1 /add /expires:never /passwordchg:no
      /fullname:"SAS Demo User" /comment:"pw=Password1"

net user sassrv Password1 /add /expires:never /passwordchg:no
      /fullname:"SAS Spawned Servers"
      /comment:"pw=Password1"

net localgroup "SAS Server Users" /add

net localgroup "SAS Server Users" sasdemo /add

net localgroup "SAS Server Users" sassrv /add
```

(list continued)

- The doit.bat file installs system requirements. This function of the BAT file is derived by using the **-srwonly** option that is mentioned previously in the section [SAS® 9.4 -srwonly Command-Line Option](#).

Note: The Microsoft .Net Framework installation command is omitted in the following commands because it was performed in a previous step.

```

::
set DEPOT_HOME=C:\SAS Software Depot\products
::
:: -----
:: Microsoft Office Access Database Engine 2010 (REQUIRED)
"%DEPOT_HOME%\ace__99120__prt__xx__sp0__1\w32\native\AccessDatabaseEngine.exe"
/quiet
"%DEPOT_HOME%\ace__99120__prt__xx__sp0__1\wx6\native\AccessDatabaseEngine_X64.exe"
" /quiet
:: -----
:: Microsoft Runtime Components 8.0 Service Pack 1 (REQUIRED)
"%DEPOT_HOME%\vcredist8__99110__prt__xx__sp0__1\w32\native\vcredist_x86.exe" /q:a
/c:"msiexec /i vcredist.msi /qn"
"%DEPOT_HOME%\vcredist8__99110__prt__xx__sp0__1\wx6\native\vcredist_x64.exe" /q:a
/c:"msiexec /i vcredist.msi /qn"
:: -----
:: Microsoft Runtime Components 9.0 Service Pack 1 (REQUIRED)
"%DEPOT_HOME%\vcredist9__99110__prt__xx__sp0__1\w32\native\vcredist_x86.exe" /q
"%DEPOT_HOME%\vcredist9__99110__prt__xx__sp0__1\wx6\native\vcredist_x64.exe" /q
:: -----
:: Microsoft Runtime Components 10 (REQUIRED)
"%DEPOT_HOME%\vcredist10__99110__prt__xx__sp0__1\w32\native\vcredist_x86.exe" /q
/norestart
"%DEPOT_HOME%\vcredist10__99110__prt__xx__sp0__1\wx6\native\vcredist_x64.exe" /q
/norestart
:: -----
:: Microsoft Runtime Components 2013 (REQUIRED)
"%DEPOT_HOME%\vcredist2013__99110__prt__xx__sp0__1\w32\native\vcredist_x86.exe"
/q /norestart
"%DEPOT_HOME%\vcredist2013__99110__prt__xx__sp0__1\wx6\native\vcredist_x64.exe"
/q /norestart
:: -----
:: Microsoft Visual Studio Tools for Office 10.0 (REQUIRED)
"%DEPOT_HOME%\vsto10__99110__prt__xx__sp0__1\wx6\native\vstor40_x64.exe" /q
:: -----

```

- The BAT file checks and removes potential registry entries (if they exist) that can cause a reboot during installation. The following code segment accomplishes this task:

```

rem CurrentControlSet

reg delete "HKLM\SYSTEM\CurrentControlSet\Control\Session
Manager" /v PendingFileRenameOperations /f

```

(code continued)

```
rem CurrentControlSet

reg delete "HKLM\SYSTEM\CurrentControlSet\Control\Session
Manager\FileRenameOperations" /f

cls
```

- The doit.bat file quietly deploys the installation with silent status. The following code segment accomplishes this task:

```
rem Install SAS 9.4 quietly with silent status

@echo off

echo Installing SAS!

"C:\SAS Software Depot\setup.exe" -quiet -nomsupdate
-silentstatus -responsefile c:\rug\installsas.txt
```

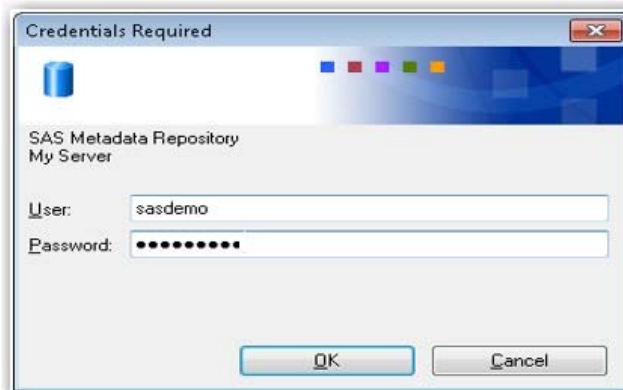
In this code, the **-nomsupdate** option prevents the system-requirements check. The system requirements are already installed, so there is no need to run the check again.

STEP 3: VERIFYING ACCESS TO CLIENT APPLICATIONS

The silent-status dialog disappears when the installation steps are completed. Open the following client applications to ensure that you can perform the steps that are listed for each one. This verification is necessary to ensure that you have a working installation.

1. Invoke SAS® Enterprise Guide® and sign in, as follows:
 - a. Select **Start ► All Programs ► SAS ► SAS Enterprise Guide 6.1 (64-bit)**.
 - b. When you are prompted, enter the following credentials:
 - User ID: **sasdemo**
 - Password: **Password1**

Note: All local accounts that you create use this same password.

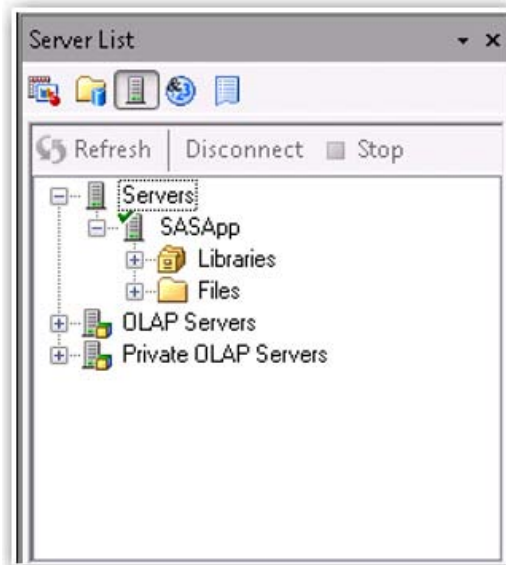


(list continued)

- c. Click **OK**. A Welcome display appears, and you should close that display.

Invoking SAS Enterprise Guide 6.1 and logging on with the user ID **sasdemo** creates a connection-configuration file for the **sasdemo** account.

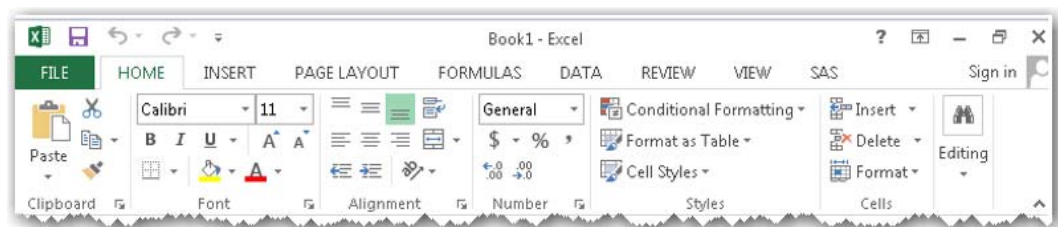
- d. After SAS Enterprise Guide 6.1 opens and you are connected to the **My Server** connection profile, open the Server List dialog box and select **Servers ► SASApp**. When the connection is made, you should see a green check mark next to **SASApp**, as shown below.



- e. Close SAS Enterprise Guide 6.1.

- 2. Invoke Microsoft Excel, as follows, to verify that the **SAS** tab and ribbon are present.

- a. Select **Start ► All Programs ► Microsoft Office <version> ► Excel version-number**. You should see the **SAS** tab and ribbon, as shown below.

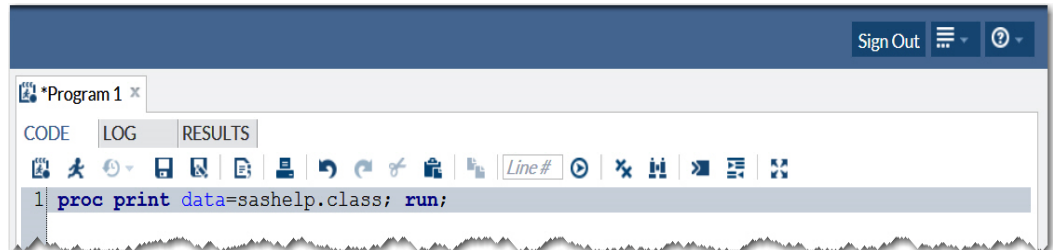


- b. Close Excel.

Note: As mentioned previously, using the **sasdemo** account in SAS Enterprise Guide 6.1 sets up a connection profile. This same connection file is used by the SAS® Add-In 6.1 for Microsoft Office when you open Excel.

(list continued)

3. Invoke SAS® Studio and verify that the software is working by submitting a PRINT procedure, as follows:
 - a. Select **Start ► All Programs ► SAS ► SAS Studio 3.2 (64-bit)**.
 - b. Submit the following PRINT procedure from the **CODE** tab in the program window (in the right pane of SAS Studio), as shown below:



This PRINT procedure results in the following output:

The screenshot shows the SAS Studio 3.2 (64-bit) interface with the 'RESULTS' tab active. The output is a table with 10 rows and 6 columns: Obs, Name, Sex, Age, Height, and Weight. The data is as follows:

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0
4	Carol	F	14	62.8	102.5
5	Henry	M	14	63.5	102.5
6	James	M	12	57.3	83.0
7	Jane	F	12	59.8	84.5
8	Janet	F	15	62.5	112.5
9	Jeffrey	M	13	62.5	84.0
10	John	M	12	59.0	99.5

- c. Exit SAS Studio by clicking the **sign Out** button.
4. Invoke SAS 9.4.
 - a. Select **Start ► All Programs ► SAS ► SAS 9.4 (English)**. When SAS opens, you should see the Enhanced Editor (labeled Editor – Untitled1), as shown below:



- b. Close SAS 9.4.

If you can open the applications that are discussed in the previous steps, the installation is ready to use. End users should continue to use the local **sas** account and password (**Password1**) that are already set

up. In the `C:\RUG` directory, you will find a Word document to assist end users in getting started with using the workshop machines. The Word document is named `Using Workshop Machines at RUG Conferences.doc`.

STEP 4: REMOVING SAS® SOFTWARE (IF NECESSARY)

You might find it necessary to remove SAS software from your machines. For example, the machines in your environment might need to be used for another purpose, or you might need to remove the software if the machines belong to a third-party vendor.

To remove the SAS installation, follow these steps:

1. Log on to your Windows environment using the local `sas` account.
2. Right-click the `undoit.bat` file in `C:\RUG` and select **Run as administrator** to remove the software.

Warning: Running the `undoit.bat` file uninstalls SAS services, the SAS installation, the `SAS Software Depot\sid_files` directory, and any leftover installation directories. As a result, the SAS Software Depot is rendered unusable. Therefore, **do not follow these steps unless you are absolutely sure** that you want to remove these items from your machine.



In the case study, a pre-built BAT file called `undoit.bat` was provided to the RUG group. This file was customized to function for the case study environment. For details about using the SAS Deployment Manager to record and playback an uninstall file, see "Chapter 7—SAS Deployment Manager: Command Line Options" in the *SAS® Deployment Wizard and SAS® Deployment Manager 9.4: User's Guide*. (support.sas.com/documentation/installcenter/en/ikdeploywizug/66034/PDF/default/user.pdf)



Although it was not used in the case study, you can use the `-uninstallall` option to remove your software without creating a response file. The `-uninstallall` option, new in SAS 9.4, is explained in the section "Uninstall All Products" in "Chapter 7—SAS Deployment Manager: Command Line Options" of the *SAS® Deployment Wizard and SAS® Deployment Manager 9.4: User's Guide*.

Similar to the `doit.bat` file, `undoit.bat` comprises four main functions:

- The `undoit.bat` file removes SAS services with the following code module:

```
echo on

rem This step stops and deletes SAS Services.
rem pause

sc stop "SAS [Config-Levl] Object Spawner"
timeout /t 5 /nobreak

sc delete "SAS [Config-Levl] Object Spawner"
timeout /t 5 /nobreak
```

(code continued)

```

sc stop "SAS [Config-Levl] SASMeta - Metadata Server"
timeout /t 5 /nobreak

sc delete "SAS [Config-Levl] SASMeta - Metadata Server"

rem Kill the sasstudio process, if it exists.
taskkill /IM SASStudioHost.exe /F
timeout /t 2 /nobreak

```

- The undoit.bat file removes SAS with the following command:

```

rem This step removes SAS.DO NOT CLOSE THIS
CMD WINDOW!

```

```

"C:\Program Files\SASHome\SASDeploymentManager
\9.4\sasdm.exe" -quiet -responsefile
c:\rug\uninstallsas.txt -silentstatus

```

- The undoit.bat file removes leftover folders that you no longer need with the following commands:

```

rem The next step removes leftover directories for the
SAS configuration, installation, Add/Remove entry, and
the SAS Software Depot\sid_files directory.

rem Be aware that if you proceed, the SAS Software Depot
will be rendered unusable!

```

```

pause

rem Clean Up
rd "C:\SAS\" /s /q
rd "C:\Program Files\SASHome" /s /q
rd "C:\ProgramData\SAS" /s /q
rd "C:\ProgramData\Microsoft\Windows\Start
Menu\Programs\SAS\Configuration" /s /q
rd "C:\ProgramData\Microsoft\Windows\Start Menu\Programs\SAS"
/s /q

```

(code continued)

```

::

    rem Appdata Area - sas account
rd "C:\users\sas\documents\my sas files\" /s /q
rd "C:\users\sas\appdata\local\sas" /s /q
rd "C:\Users\sas\appData\local\temp\SAS Temporary Files" /s /q
rd "C:\users\sas\appdata\roaming\sas" /s /q
::

    rem SAS Studio files - sas account
rd "C:\users\sas\.images" /s /q
rd "C:\users\sas\.mysnippets" /s /q
rd "C:\users\sas\.mytasks" /s /q
rd "C:\users\sas\.sasstudiohost_3.2" /s /q
rd "C:\users\sas\.webwork" /s /q
rd "C:\users\sas\.wepreferences" /s /q
rd "C:\Users\sas\appData\local\temp\SASStudioTemp" /s /q
::

    rem Appdata Area - sasdemo account
rd "C:\users\sasdemo\documents\my sas files\" /s /q
rd "C:\users\sasdemo\appdata\local\sas" /s /q
rd "C:\Users\sasdemo\appData\local\temp\SAS Temporary Files"
/s /q
rd "C:\users\sasdemo\appdata\roaming\sas" /s /q
::

    rem Appdata Area - sassrv account
rd "C:\users\sassrv\documents\my sas files\" /s /q
rd "C:\users\sassrv\appdata\local\sas" /s /q
rd "C:\Users\sassrv\appData\local\temp\SAS Temporary Files"
/s /q
rd "C:\users\sassrv\appdata\roaming\sas" /s /q

```

(list continued)

- The undoit.bat file removes the **sid_files** folder from the SAS Software Depot with the following commands:

```
rem Remove the sid_files folder.

rd "C:\SAS Software Depot\sider_files" /s /q

::

::

cls
```

TROUBLESHOOTING THE INSTALLATION PROCESS

In the beginning stages of testing the installation process, it is likely something might fail or might not work properly. For example, it might be difficult to determine if something goes wrong with a quiet installation. This section provides a list of common problems you might encounter as well as the best method for troubleshooting such problems.

COMMON PROBLEMS

Any of the following issues will cause a quiet installation to fail, which, in turn, causes the silent-status dialog box to disappear prematurely.

- an invalid path to the SID file in the response file
- an invalid SID file name in the response file
- an invalid computer name in the response file
- an invalid path to the plan file in the response file
- a missing plan file
- an improper hyphen for a command-line option command line (see SAS Note 37418, "You must use a hyphen with command-line options in the SAS Deployment Wizard" - support.sas.com/kb/37/418.html)

You should keep in mind that the response file dictates the installation. If entries in the response file are incorrect, the installation fails.



In the case-study environment, some test machines were not used for an extended time. Because of the extended time, the SAS accounts became disabled. If this happens, you can reset those accounts by running the two BAT files resetsasaccounts01.bat and resetsasaccounts02.bat that are in the **C:\RUG** directory. Be sure to run the files in the order shown here. The code modules for these files are shown below.

The resetsasaccounts01.bat File:

```
echo on

net user sas /logonpasswordchg:no /passwordchg:yes

net user sasdmo /logonpasswordchg:no /passwordchg:yes

net user sassrv /logonpasswordchg:no /passwordchg:yes

pause
```


The resetsasaccounts02.bat File:

```
echo on

net user sas Password1

net user sasdmo Password1

net user sassrv Password1

pause
```

BEST METHOD FOR TROUBLESHOOTING

For troubleshooting purposes, the best solution is to make the installation process manual and visually examine the process. To do that, you need to remove the **-quiet** option from the installation command so that you can run the installation manually against the same response file. By using this method, you can typically determine where the problems are. Then you can modify those areas to correct the installation.

Example of an Installation Command with the **-quiet** Option:

```
"C:\SAS Software Depot\setup.exe" -quiet -nomupdate -silentstatus
-responsefile C:\rug\installsas.txt
```

Example of an Installation Command without the **-quiet** Option:

```
"C:\SAS Software Depot\setup.exe" -nomupdate -responsefile
C:\rug\installsas.txt
```



In this command, the **-silentstatus** option is removed also because it does not take effect without the presence of the **-quiet** option is not present.

The following examples are all run without the **-quiet** option so you can see the error or warning that is generated for each problem.

Example of an Installation Command with a Misspelled Option

In the following example, the **-responsefile** option is misspelled:

```
"C:\SAS Software Depot\setup.exe" -nomupdate -responcefile
C:\rug\installsas.txt
```

When you submit this command, the following error is generated:



Example of an Installation Command with an Expired SAS Installation Data File

```
"C:\SAS Software Depot\setup.exe" -nomupdate -responsefile
C:\rug\installsas.txt
```

When you submit a command that contains an expired SID file, the following warning is generated:



Example of an Installation Command Where the plan.xml File Is Missing from the SAS® Software Depot

```
"C:\SAS Software Depot\setup.exe" -nomsupdate -responsefile  
C:\rug\installsas.txt
```

When you submit a command that contains an expired SID file, the following warning is generated:



CONCLUSION

This paper provides a case study about setting up machines for SAS Regional Users Groups. Steps, methods, and examples illustrate how you can automate installations without the use of provisioning software. You can use the guidelines discussed in this paper in your own lab, training, and workshop environments. Once the preparation work is performed, you can deploy the installation across many machines with relative ease and success.

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RECOMMENDED READING

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