Installation Instructions for SAS® 9.3 Installation Kit for Basic Cartridge Installations on z/OS

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This document provides all of the information related to unloading and installing a SAS 9.3 order from cartridges on z/OS systems for which you have purchased licenses. Please review this document in its entirety.

Before You Begin—Prerequisites and Overview

Important: *If you received this order to add maintenance or additional SAS Software products to your existing order, please note that this process creates a new SAS installation, requiring a different high-level-qualifier for your traditional data sets and a new SAS home directory. Using your existing high-level-qualifier will cause unpredictable results.*

System Requirements

Confirm that your system meets the minimum requirements by referring to the system requirements from the SAS 9.3 Install Center Documentation Web site (http://support.sas.com/documentation/installcenter/93/index.html) and selecting **Documentation for SAS 9.3 Installation on z/OS.**

Installation Alert Notes

On the http://support.sas.com/notes/index.html web page, click **Search Installation Notes.** Select the **Results Filter** tab, and then select **alert** as the Priority, **9.4** as the SAS Release and **z/OS** as the Operating System. Then press **Enter**.
Review the Installation Alert Notes that are listed to see if they apply to this installation order.

Software Order E-mail (SOE)

To install SAS 9.3 on z/OS, start with the Software Order E-mail (SOE) you received from SAS Institute. This e-mail contains details such as the order number, a key, and the type of installation you have. You will be using one of the two jobs attached to the SOE to unload your customized z/OS image from tape.

SAS Home Location

SASHOME is the UNIX directory location where the UNIX file system components of your SAS software are installed on your machine. This location becomes the default installation location for any other SAS software you install on the same machine. You will need about 3 GB of UNIX file system space for your SASHOME directory.

Installed Version of Java

You must have a version of java installed that SAS supports. You can check SAS's third party support Web page for information about the latest supported versions of Java at http://support.sas.com/resources/thirdpartysupport/.

Updating the Logon Password

If you wish to apply hot fixes without running the hot fix jobs manually, you must update the logon password. See "Updating the Logon Password" on page 9 for more information.

Applying Maintenance

Note that this installation method always creates new data sets and a new SAS home directory. If you have SAS 9.3 TS1M0 currently installed and you are applying maintenance, you will create a completely new installation that includes maintenance.

Unloading Your Customized z/OS 9.3 Tape

Overview

For SAS 9.3, SAS has instituted a new process for z/OS systems utilizing a tape cartridge without a SAS Software Depot. Your customized system image, based upon your order, has been built at SAS, and will be sent to you on a 3590 tape cartridge. Your setinit license has already been applied to this image.

You will use either DFDSS or FDRDSF to restore the traditional data sets to disk and PAX to restore the SAS Home directory to UNIX file system space. JCL has been provided to allow you to rename the image to your high-level qualifier (HLQ) and to tailor any site-specific information that you require.

Two files were attached to your Software Order E-mail: `JCL_to_unload_Cart_with_DFDSS.txt` and `JCL_to_unload_Cart_with_FDR.txt`. These files contain JCL which has been **customized for your site** based upon your order. You will **only use one of these files** depending upon the backup/restore software product that is used at your site. These files (jobs) are also located in the TAPECTL data set created in Step 1 for backup purposes.

You will restore the data from tape and then modify references to high-level qualifiers or the path to the SASHOME directory consistent with your site's standards.

An overview of the process follows:

1. Restore the traditional SAS system data sets from tape to a defined high-level qualifier.

2. Restore the SAS home directory in UNIX file system space.

3. Replace certain strings with your site-specific values.

Detailed Installation Steps

Important:

*   All installation jobs include case-sensitive strings—you **MUST** set CAPS OFF in the SPF editor while editing these jobs.
*   After choosing the first job from your Software Order E-mail, all subsequent jobs and members will be found in the data set "`<HLQ>.TAPECTL`" where `<HLQ>` is the high-level qualifier you will use for the data sets in your SAS installation.

*   The data set `<HLQ>.TAPECTL` that you place either in the RES1DSS or RES1FDR jobs must have a different `-HLQ-.` than the image which is being restored to; otherwise a return code of 08 will be generated.

Step 1: Restore the Traditional SAS System Data Sets from Tape to a Defined High-level Qualifier

You must choose which method to use to unload the SAS system image. Use either IBM Corporation's ADRDSSU or Innovative Data Processing's FDRDSF program, whichever your site uses, and execute the job for that utility. A sample of each job, customized for your installation, was attached to your Software Order E-mail. The comments at the beginning of the JCL statements provide additional information.

Important: Do **NOT** run both jobs.

DFDSS: `RES1DSS` Job

Note: If you are using SMS, be sure to read the additional information in Steps 2b and 4 below.

1. Fill in the necessary JOBCARD information.

2. Change the first three SET statements:

   a. `SET      DISKUNIT='SYSALLDA'`
   Disk unit for data sets

   b. `SET      DISKVOL='XXXXXX'`
   Disk volser for data sets

      Note: If you are using SMS, you must add a valid disk volume and follow the instructions in Step 4 below.

   c. `SET      TAPEUNIT='3590-1'`
   3590B unit or esoteric

   *Note: The TAPEVOL and TAPEDS1 set statements have been customized for your order and should **not** be changed.*

3. In the SYSIN to ADRDSSU (step DSSREST): Specify the high-level qualifier you want the data sets in your SAS installation to have, in place of '-HLQ-', in the RENAMEU keyword. Note that there is a limit of 23 characters for the HLQ, and it must be in uppercase. You can only use a two-level replacement value. If you need a three-level high-level qualifier, you will need to restore using a two-level value and then rename the restored data sets.

4. If you are using SMS, in the SYSIN DD statement, you must provide a valid STORCLAS value after the CATALOG statement. Follow these steps:

   a. Enter a continuation character (a **dash**) on the CATALOG statement.

   b. Enter the STORCLAS(*your site value*) statement on the next line.

   You may also add a MGMTCLAS value if you wish to do so. Follow these steps:

   a. Enter a continuation character (a **dash**) on the STORCLAS statement.

   b. Enter the MGMTCLAS(*your site value*) statement on the next line.

   *Note: DATACLAS is **not** a valid option for a restore. For more information, refer to* http://publibz.boulder.ibm.com/epubs/pdf/dgt2u2a0.pdf.

For example, here is a sample of the JCL both before and after the STORCLAS and MGMTCLAS values were added:

BEFORE:

```
//SYSIN    DD *
 RESTORE DATASET(                                              -
            INCLUDE(**)                                        -
                  )                                            -
            RENAMEU(                                           -
                  (**,                                         -
                   -HLQ-.**)                    /* Supply */ -
                  )                                            -
            INDDNAME(TAPEDD1)                                  -
            OUTDDNAME(DISKDD1)                                 -
            CATALOG
/*
//
```

AFTER:

```
//SYSIN    DD *
 RESTORE DATASET(                                              -
            INCLUDE(**)                                        -
                  )                                            -
            RENAMEU(                                           -
                  (**,                                         -
                   -HLQ-.**)                    /* Supply */ -
                  )                                            -
            INDDNAME(TAPEDD1)                                  -
            OUTDDNAME(DISKDD1)                                 -
            CATALOG                                            -
            STORCLAS(your site value)                          -
            MGMTCLAS(your site value)
/*
//
```

5. Submit the job.

OR

FDRDSF: `RES1FDR` Job

Note: If you are using SMS, be sure to read the additional information in Steps 2b and 4 below.

1. Fill in the necessary JOBCARD information.

2. Change the first three SET statements:

   a. `SET        DISKUNIT='SYSALLDA'`
      Disk unit for data sets

   b. `SET        DISKVOL='XXXXXX'`
      Disk volser for data sets

      Note: If you are using SMS, you must add a valid disk volume and follow the instructions in Step 4 below.

   c. `SET        TAPEUNIT='3590-1'`
      3590B unit or esoteric

   Note: The TAPEVOL and TAPEDS2 set statements have been customized for your order and should **not** be changed.

3. In the SYSIN to FDRDSF (step FDRREST):
   Specify the high-level qualifier you want the data sets in your SAS installation to have, in place of '-HLQ-' in the NEWINDEX keyword. Note that there is a limit of 23 characters for the HLQ, and it must be in uppercase.

4. If you are using SMS, in the SYSIN DD statement, you must provide a valid STORCLAS value after the NEWINDEX statement. Follow these steps:

   a. Enter a continuation character (a **comma**) after your –HLQ- specification on the NEWINDEX statement.

   b. Enter the STORCLAS=*your value* statement on the next line.

   You may also add MGMTCLAS and DATACLAS values if you wish to do so. Follow these steps:

   a. Enter a continuation character (a **comma**) after the STORCLAS value.

   b. Enter the MGMTCLAS=*your value* and/or DATACLAS(your value) statements on the same line, with each value separated by a comma.

   For example, here is a sample of the JCL both before and after the STORCLAS, MGMTCLAS, and DATACLAS values were added:

   BEFORE:
```
//SYSIN    DD *
  RESTORE TYPE=DSF
  SELECT ALLDSN,
    NEWINDEX=-HLQ-
/*
//
```

```
   AFTER:
//SYSIN    DD *
  RESTORE TYPE=DSF
  SELECT ALLDSN,
    NEWINDEX=-HLQ-,
    STORCLAS=your value,MGMTCLAS=your value,DATACLAS=your value
/*
//
```

5. Submit the job.

Step 2: Restore the SAS Home Directory to UNIX File System Space

This step restores the SAS Home directory to UNIX file system space. You can either create the necessary UNIX file system space using the first job REC2CZFS, or your system staff may create a suitable UNIX file system space for you. You may use either hFS or zFS, but zFS will provide better performance. You will need about 3 GB of UNIX file system space for your SAS Home directory.

Optional: RES2CZFS Job

Note: *This job (JCL located in `<HLQ>.TAPECTL`) is provided as an example of how to create a UNIX file system space and mount it, if your site does not know how to create one and the SAS installer is allowed to do so.*

This job allocates a UNIX file system data set and formats it in compatibility mode to hold the UNIX file system for the SAS image. In order to properly execute this job you must have sysadmin mount authority. You do *not* need to run this job if you already have UNIX file system space created for this installation. The comments at the beginning and end of the JCL statements may provide additional information.

1. Fill in the necessary JOBCARD information.

2. Change the four SET statements:

    a. `SET      ZFS='-HLQ-.ZFS'`
        Data set name of the zFS. Note that `'-HLQ-' must be in uppercase.`

    b. `SET      SU='BPXROOT'`
        User ID with UID=0 authority

    c. `SET      SASADMIN='sasadm'`
        User ID owning the file system

    d. `SET      MOUNTPT='/?????'`
        Location of SAS Home Directory. For example, `/usr/lpp/SAS/SAS93`.

3. In the SYSIN to IDCAMS (step ALLOCZFS):
    - Change the zFS data set name, -zFS-, in the NAME keyword.
    - Change the volume assignment, -VOLSER-, in the VOLUME keyword.

4. In the SYSTSIN to IKJEFT01 (step MOUNTZFS):
    - Change the zFS data set name, -zFS-, in the FILESYSTEM keyword.
    - Change the mount point, -mountpoint-, in the MOUNTPOINT keyword.

5. Submit the job.

RES3UNIX Job

This job (JCL located in `<HLQ>.TAPECTL`) restores the SAS Home directory to a UNIX file system. This UNIX file system must exist prior to executing the RES3UNIX job. The RES2CZFS job must complete before this job can be executed unless the RES2CZFS job did not need to be run due to pre-existing UNIX file system space for the installation.

1. Fill in the necessary JOBCARD information.

2. Change the first three SET statements:

    a. `SET      TAPEUNIT='3590-1'`
       3590B unit or esoteric that is appropriate for your 3590 tape drives.

    b. `SET      PAXSCRPT='/???/pax_tape.sh'`
       pax restore script location. This directory must already exist.

    c. `SET      MOUNTPT='/?????'`
       Location of SAS USS install—SASHOME. This should be the same value as MOUNTPT in the RES2CZFS job, if you used it.

    Note: *The TAPEVOL and TAPEDS3 set statements have been customized for your order and should **not** be changed.*

3. Submit the job.

Step 3: Replace Certain Strings with Site-Specific Values

You must edit the RPLVARC control file and then run the following two jobs:

RPLVARC Control File

This is a control file (JCL located in `<HLQ>.TAPECTL`) for customizing SAS at your site. This needs to be edited before the subsequent JCL jobs are run. Modify the following:

1. HLQ — your high-level qualifier which must be in upper case. Note that there is a limit of 23 characters.

2. SYSNAME — the machine name in upper case on which this installation resides (replacing ZOSHOST).

3. LSYSNAME — the machine name in lower case on which this installation resides (replacing zoshost).

4. SASPATH — your SASHOME directory path.

5. JAVAHOME — your JAVAHOME directory path; for example, `/usr/lpp/java/J6.0`.

Note: Steps 6–9 allow you to override the SAS-supplied JOBCARD parameters with those that are specific to your site.

6. JOBCARD2 — MSGCLASS, MSGLEVEL, and CLASS

7. JOBCARD3 — TIME and REGION

8. JOBCARD4 — a comment by default. Add a comma after your last parameter on JOBCARD3 if you need to use this JOBCARD.

9. JOBCARD5 — a comment by default. Add a comma after your last parameter on JOBCARD4 if you need to use this JOBCARD.

10. USER — your installer user ID in upper case (replacing USERNM).

11. LUSER — your installer user ID in lower case (replacing usernm).

Note: Steps 12–16 are only needed if the order includes SAS/IntrNet. If your order does not contain SAS/IntrNet, put an asterisk (*) before each of these lines to comment them out.

12. CGIBINURL — the URL for CGI executables.

13. ADMINNAME — the name of the administrator.

14. ADMINMAIL — the e-mail address of the administrator.

15. APPSRVHOSTNAME — the DNS name or IP address of the application server host where SAS Foundation is located.

16. APPSRVPORT — the customary default port number is 5001, but you can use any valid available port on your system between 256 – 65535.

17. DSKVOL — specify DASD volume. This value is **required**.
    Note: If USESMS is true, then specify `'DSKVOL=_blank/null_'`.

18. USESMS — set to "True" if using SMS; otherwise set to "False". This value is **required**.

19. SMSDTCLS — set to the value of your SMS data class. This value is **required** if USESMS=True. Otherwise, leave the value as '_blank/null_'.

20. SMSMGCLS — set to the value of your SMS management class. This value is **required** if USESMS=True. Otherwise, leave the value as '_blank/null_'.

21. SMSSTCLS — set to the value of your SMS storage class. This value is **required** if USESMS=True. Otherwise, leave the value as '_blank/null_'.

22. Save your changes.

RPLCPDS Job

This job (JCL located in `<HLQ>.TAPECTL`) modifies the z/OS traditional datasets with the values you specified in member RPLVARC.

1. Fill in the necessary JOBCARD information.

2. Change the following SET statement:

```
SET   JOBSPDS='-HLQ-.TAPECTL'
```
Customer install PDS. Note that `'-HLQ-'` must be in uppercase.

*Note: Your HLQ is now the text **before** "`.TAPECTL`" and must be entered in upper case.*

3. Submit the job.

4. Review the output to ensure that everything ran successfully.

RPLCUSS Job

This job modifies the UNIX file system files in the SAS Home directory with the values you specified in member RPLVARC.

1. Fill in the necessary JOBCARD information.

2. Change the two SET statements:

   a. `SET       JOBSPDS='-HLQ-.TAPECTL'`
      Customer install PDS

      *Note: Your HLQ is now the text **before** "*`.TAPECTL`*" and must be entered in upper case.*

   b. `SET       TMPPATH='/tmp'`
      Temporary location used to write the shell script that performs the string replacement.

      Note: "`tmp`*" is a UNIX directory and its name is case sensitive. This location **must** exist before the RPLCUSS job is run.*

2. Submit the job.

3. Review the output to ensure that everything ran successfully.

Updating the Logon Password

Note: You only need to update your logon password if you want to run hot fix installations without `-nojobsubmit`.

When you receive a new tape cartridge in your SAS 9.3 order, or the administrator of your system changes their logon password, you must run a rexx program to update the password that the previous SAS installation process stored. The user ID and password of the person who initially installed the system is located in the `install.properties` file. The password is encrypted and you will not be able to view it if you open the file. Do not attempt to edit this file on your own.

The CHGPW.REXX program is used to change the password. To run this program under omvs, use the "cd" command to navigate to `[SASHOME]/SASDeploymentManager/9.3`, type the command **chpw.rexx**, and follow the prompts.

To run this program in USS space, type **chgpw.rexx** and follow the prompts. It can be found in USS under `[SASHOME]/SASDeploymentManager/9.3`. Upon invoking the program, you will see the java version found in the system displayed on the screen along with the following:

`Enter password for YOURID:`   *<enter the current password for your user ID>*

The following prompt will appear:

`Enter password again:`   *<enter the same password that you provided for the previous prompt>*

If the passwords to the prompts are not the same, the following text will be displayed:

`Passwords don't match. Try again.`

If the passwords match, the following prompt will appear:

```
Password successfully updated.
```

Additional Configuration Steps

After all installation jobs have finished, submit the VALID job in the `'-HLQ-.INSTALL.CNTL'` data set and ensure that all steps complete with a return code of 0.

Note: You may need to edit the job cards to comply with your site's JCL policies.

Complete any required product-specific post-installation steps by referring to the z/OS configuration guide available from the SAS 9.3 Install Center Documentation Web site (http://support.sas.com/documentation/installcenter/93/index.html) and selecting **Documentation for SAS 9.3 Installation on z/OS**.

Tips and Additional Information

For the latest installation news, please visit these sites for tips and additional information that may not be in your documentation:

General support for SAS issues (including a link to SAS Technical Support)

http://support.sas.com

Technical Support SAS 9.3 Hot Fix downloads

http://ftp.sas.com/techsup/download/hotfix/HF2/93p2_home.html

Locating the log files for SAS 9.3 installations

http://support.sas.com/kb/43/606.html

Documentation for a SAS 9.3 installation on z/OS

http://support.sas.com/documentation/installcenter/93/mvs/index.html

Technical Support

- If you need assistance with the software, we ask that only the SAS Installation Representative or the SAS Support Consultant call our Technical Support Division.
  For U.S. and Canadian customers, support is provided from our corporate headquarters in Cary, North Carolina. You may call (919) 677-8008, Monday through Friday.
  Customers outside of the U.S. can obtain local-language technical support through the local office in their countries. Customers in these locations should contact their local office for specific support hours. See http://support.sas.com/techsup/contact/index.html for contact information for local offices.
- Before calling, you may want to explore the SAS Institute Technical Support Web site at http://support.sas.com/techsup/. The Technical Support Web site offers a Knowledge Base, FAQs, Technical Support Documents and more that may answer your questions. This Web site also provides a mechanism for reporting problems.

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