



SAS[®] Credit Scoring for Banking 4.3

Hot Fix 1

SAS[®] Banking Intelligence Solutions

The Power to Know[®]

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SAS® Credit Scoring for Banking 4.3: Hot Fix 1

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CHAPTER

1

Introduction

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1.1 Overview

SAS® Banking Intelligence Solutions is a suite of solution offerings addressing business areas in banking. SAS® Credit Scoring for Banking 4.3 enables a bank to build, deploy and monitor analytical models for scoring credit customers and exposures to determine their risk profile on the basis of ‘Probability of default’ (at application and ongoing), loss given default and credit conversion factor.

1.1.1 Purpose of This Document

This document provides guidance on how to use Hot Fix 1 for SAS® Credit Scoring for Banking 4.3, which will resolve the errors described in this document.

1.1.2 Audience

Data Warehouse Architect, Data Modeler, System Specialist, Warehouse Consultant, Data Integration Specialist, and Credit Scoring Solution Specialist on the Service Provider’s side and by the IT Analyst, Warehouse Administrator, System Administrator, Application Developer, and Database Administrator on the client’s end should use this document.

1.2 Prerequisite Software

The SAS® software that should be installed prior to the installation of Hot Fix 1 for SAS® Credit Scoring for Banking 4.3 is:

1. SAS® Credit Scoring for Banking 4.3

1.3 Package Contents

The installable files for Hot Fix 1 for SAS® Credit Scoring for Banking 4.3 are available on the CD included in this package:

File Name	Description
bis_crs_4.3_hf1_installable_server_for_windows.zip	This file should be used for installation on a Windows server. It contains folders and macros.
bis_crs_4.3_hf1_installable_server_for_unix.tar.gz	This file should be used for installation on a UNIX server. It contains folders and macros.
bis_crs_4.3_hf1_installable_client.zip	This file should be used for installation on both Windows and UNIX Servers via SAS clients such as DI Studio, SMC. It contains metadata for jobs and custom groups.



2.1 Errors Handled 7

2.1 Errors Handled

The errors handled in this hot fix are described below:

Table 1. Hot Fix – Errors Handled

No.	Error Description	Solution and Files Affected/Changed	Error Number in Sirius Track
1.	After running the master loop jobs the log files produced did not have name corresponding to job names.	Jobs and deployed codes for: MasterLoopCreditScoringJob LoopCreditScoringJob ControlCreditScoringJob MasterLoopModelingABTJob LoopModelingABTJob ControlModelingABTJob MasterLoopPoolingABTJob LoopPoolingABTJob ControlPoolingABTJob MasterLoopScoringABTJob LoopScoringABTJob ControlScoringABTJob MasterLoopStarSchemaJob LoopStarSchemaJob ControlStarSchemaJob	NA
2.	There was an error due to incorrect handling of ACCOUNT_SKs in the ABT jobs in the solution. The problems were with joining ACCOUNT_SK from fact tables to ACC_DEF_EVENT_X_ACC_DIM.ACCOUNT_SK.	All the jobs mentioned in table 2.2.3.4 having values in ‘Type of Error’ column as ‘ABT er1001920’. Also the deployed code for these jobs is changed.	er1001920

No.	Error Description	Solution and Files Affected/Changed	Error Number in Sirius Track
3.	There were some errors in updating the statistics for development and scoring sample in /Data/bisdata/macro/factupdates macros. Some changes with respect to internationalization also occurred.	load_score_card_variable_fact.sas, load_pd_score_card_variable_fact.sas, load_pd_model_measure_fact.sas, load_model_measure_fact.sas, load_lgd_model_measure_fact.sas, load_ccf_model_measure_fact.sas, load_aplpd_model_measure_fact.sas macros in /Data/bisdata/macro/factupdates folder	NA
4.	There were some corrections needed for the framework scripts for the ABT Framework screens to show appropriate values in the drop down boxes. There were errors in the ABT metadata (var_master) for variables ACC_DSBR_CURR_MTH_AMT and ACC_CLS_FEE_AMT for Mortgage and Loans category columns.	New file crs_hf1_abt_metadata.sas copied into Data/bisdata/code/frame_work_script folder for correcting the mentioned variables in var_master. The existing files abt_purpose_crs.sas, abt_purpose_x_level_crs.sas, abt_purpose_x_product_crs.sas , outcome_master.sas, outcome_master_sub.sas are overwritten.	NA
5.	There were problems in populating COLLATERAL_AMT and APPROVED_AMT fields for Mortgage accounts.	APPEND_ACCOUNTS ETL job and deployed code has been changed, PRP_EXT ETL job and deployed code added. Script crs_hf1_fnd_mart_insert.sas in folder Data/bisdata/code/foundation_job_dependency adds the job dependency for the new job PRP_EXT.	er1001923

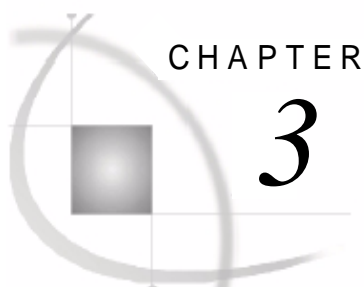
No.	Error Description	Solution and Files Affected/Changed	Error Number in Sirius Track
6.	<p>Additional parameter values were needed for PRP_EXT job. Also default values related to PDA_ACC_MDL, PDA_CUS_MDL, PDO_ACC_MDL, PDO_CUS_MDL, LGD_ACC_MDL, LGD_CUS_MDL, CCF_ACC_MDL need to be set properly.</p> <p>Description for the following parameters to be set properly - CONF_REPORT_PATH, CS_STAB_MDL_DB_SEL_MSR_LGD, CS_STAB_MSR_NAME_LGD, CS_CLIB_MDL_DB_SEL_MSR_LGD, LONG_TERM_DEP_MTH_CNT, ACCT_PROFIT_THRESHOLD, ACCT_REVENUE_THRESHOLD, ACCT_TENURE_THRESHOLD, CUS_RLTN_THRESHOLD, PR_ACCT_DNS_THRESHOLD, PR_PROFIT_THRESHOLD, PR_REVENUE_THRESHOLD, CUS_PROFIT_THRESHOLD, CUS_REVENUE_THRESHOLD, IO_ACCT_DNS_THRESHOLD, IO_CUST_DNS_THRESHOLD, IO_PROFIT_THRESHOLD, IO_REVENUE_THRESHOLD</p>	<p>Scripts needed are given in the package Data/bisdata/code/parameter/crs_hfl_parameter_script.sas.</p>	NA
7.	<p>The default values were not set for count variables in ABT.</p>	<p>All changed code files are in Data/bisdata/macro folder in the installable server part of hot fix. The macros are mentioned in table 2.2.3.5 with values 'Changes for count variables default value' in the 'Type of Error' column.</p>	NA
8.	<p>There were errors in credit scoring job dependency in PARAMETER_LIST_CREDIT_SCORING dataset.</p>	<p>Existing file Data/bisdata/code/foundation_job_dependency/star_credit_scoring_job_dependency.sas will be replaced to correct these errors.</p>	er1001853

No.	Error Description	Solution and Files Affected/Changed	Error Number in Sirius Track
9.	There was a need to change the dataset structure for pool_menu_items located in the folder Data/bisdata/code/pooling_script.	pool_menu_items.sas file in Data/bisdata/code/pooling_script. Length of MENU_NM field is increased to 100 to avoid truncation of long names.	NA
10.	The code for selecting product type for final ABT was required. In absence of this patch, the ABT will be created with records of all product types.	Create_abt.sas and build_scr_aggr_tables.sas in Data/bisdata/macro/analytics folder and build_abt.sas in bisdata/storedprocs/analytics	er1001921
11.	While creating a new modeling ABT template, if the product type is not selected, the required alert message does not get displayed, in some cases.	template_step1.sas in Data/bisdata/storedprocs/analytics/templates folder	NA
12.	%global job_rc trans_rc sqlrc; causes error while running jobs from ABT framework	Remove line %global job_rc trans_rc sqlrc; from all the deployed jobs located at Data/bisdata/jobs	NA
13.	There was a change needed in APPL_APPT_SUMMARY_ABT job to consider the Primary applicant along with Joint Applicant 1 and 2.	APPL_APPT_SUMMARY_ABT job and deployed code.	er1001926
14.	There was an error during loading data in ACCOUNT_SNAPSHOT fact table, where the records having EMPLOYEE_RK null were skipped.	ACCOUNT_SNAPSHOT, ACCOUNT_SNAPSHOT_PRE_FACT jobs, deployed code and datasets.	er1001947
15.	There were errors in creating Application level ABTs. The word APPL was incorrectly used instead of APPLICATION in build_abt.sas file.	The build_scr_aggr_tables.sas file in bisdata/macro/analytics folder and build_abt.sas in bisdata/storedprocs/analytics	er1001856
16.	There were some corrections in the documentation.	Details are available in the chapter titled, <i>Documentation Updates, below.</i>	NA
17.	There was an error in autoexec_crs.sas where the path for pooling was missing. There were changes needed for Internationalization fix.	autoexec_crs.sas autoexec.sas The above files in the existing installation will be replaced by the files in the package.	NA

No.	Error Description	Solution and Files Affected/Changed	Error Number in Sirius Track
18.	There were some errors in Internationalization.	<p>The bismsg.smd file has been split into two files bismsg.smd and bismsg_config.smd. All the text for the keys in bismsg.smd can be localized. All the English keys that should not be localized are present in bismsg_config.smd. The contents of this file should not be changed. The code for macro smd2ds.sas is changed and the call to smd2ds.sas macro from all_include_credit_scoring.sas file is removed.</p> <p>all_include_credit_scoring.sas file in Data/bisdata/code folder</p> <p>bismsg.smd and bismsg_config.smd files in Data/bisdata/internationalization folder</p> <p>smd2ds.sas file Data/bisdata/macro/internationalization folder</p>	NA
19.	For ABT Framework, the temporary tables used between HTML page calls should not be stored in work library.	Stored processes under Data/bisdata/storedprocs/analytics and macros in Data/bisdata/macro/analytics	NA
20.	A new code AM_EXT_AB_T_FW is required similar to AM_EXT job for Capturing Model information functionality in ABT Framework. In order to run the jobs from ABT Framework, loopabtmodeljob.sas, controlabtmodeljob.sas and the metadata for the input table - PARAMETER_LIST_MODEL_J OBS is needed.	<p>A new file AM_EXT_AB_T_FW.sas added in Data/bisdata/jobs folder.</p> <p>loopabtmodeljob.sas, controlabtmodeljob.sas in Data/bisdata/jobs folder and crs_hf1_abt_metadata.sas script in Data/bisdata/code/frame_work_script folder.</p>	NA
21.	There were some errors in macro variable resolution in build_abt.sas and build_score_abt.sas. Also some changes with respect to internationalization were required.	<p>build_score_abt.sas in Data/bisdata/macro/analytics and build_abt.sas in Data/bisdata/storedprocs/analytics</p>	NA
22.	There were some errors in scr_template_step3.sas and scr_template_step4.sas for ABT Framework.	scr_template_step3.sas , scr_template_step4.sas files in Data/bisdata/storedprocs/analytics/scoring	NA
23.	There were some errors in save_add_var.sas for ABT Framework.	save_add_var.sas in Data/bisdata/storedprocs/analytics/expl ore_abt	NA

No.	Error Description	Solution and Files Affected/Changed	Error Number in Sirius Track
24.	There is an error in the by clause in a code block from the create_abt.sas file. This was APPLICATION instead of APPLICATION_RK.	create_abt.sas in bisdata/macro/analytics folder	NA
25.	There were errors in CAS_EXT and CMS_EXT jobs in group by clause.	CAS_EXT and CMS_EXT ETL jobs and deployed code	NA
26.	There was an error in if condition in the job AM_POOL_SCHEME_APS_TRANSPPOSED.	AM_POOL_SCHEME_APS_TRANSPPOSED ETL job and deployed code	NA
27.	Missing mappings in the ETL jobs CREDIT_BUREAU_DETAIL, CUS_ACC_SNAP_LST_12M_AB T, FINANCIAL_PRODUCT_PRE_D IM, INTERNAL_ORG_PRE_DIM, SEGMENT_DIM,ULN_ACC_SN AP_6M_BCK_ABT.	ETL jobs and deployed code for CREDIT_BUREAU_DETAIL, CUS_ACC_SNAP_LST_12M_AB T, FINANCIAL_PRODUCT_PRE_DIM, INTERNAL_ORG_PRE_DIM, SEGMENT_DIM, ULN_ACC_SNAP_6M_BCK_ABT	NA
28.	The jobs Formats_for_model_monitoring_report and USER_DEFINED_FORMAT_CREATION needed to be changed for Internationalization.	Only the ETL jobs Formats_for_model_monitoring_report and USER_DEFINED_FORMAT_CREATION. The deployed code is not required.	NA
29.	Additional code was required to redirect the log after the create_abt macro is called.	build_abt.sas in bisdata/storedprocs/analytics	NA
30.	If modeling values are not present in model_measure_fact then the measure names are not shown on the screen.	Storedprocesses in bisdata/storedprocs	NA
31.	There was an error in the where clause of ACC_DEF_EVENT_CURR_EXT job. Date value is compared with a datetime value. Correct argument should be used in the function.	ACC_DEF_EVENT_CURR_EXT job and deployed code	NA
32.	Additional demo data was required for three DDS tables used for formats creation.	Additional files are included in the package	NA

No.	Error Description	Solution and Files Affected/Changed	Error Number in Sirius Track
33.	There were errors in the user written transform name in jobs ACC_DEF_RCV_LST_3M_LKP and ACC_DEF_RCV_13_24M_LKP	ACC_DEF_RCV_LST_3M_LKP and ACC_DEF_RCV_13_24M_LKP jobs and deployed code	NA
34.	There was incorrect label in Stability Index report in Model Monitoring.	Stored Process - stability_index.sas and macro ssi_app.sas (macro/computations/pd)	NA
35.	There were some errors in the Model monitoring reports – all PD reports and Model input monitoring reports.	Stored Processes in folders Data/bisdata/storedprocs/pd, Data/bisdata/storedprocs/lgd and Data/bisdata/storedprocs/ccf	NA
36.	<p>The following errors were present in pooling screens -</p> <ol style="list-style-type: none"> 1. In the drop down menu while defining pool schemes (with options - merge, split, interval, and quantile), edit boxes were having spaces by default. These spaces were causing errors. Also if the user enters values out of range in the interval or split of any pool, the stored process error occurred. 2. For all screens while calculating statistics, if all defaults or No defaults were present in the data, the related stored processes were executed and errors were displayed on the screen. 3. In all text boxes in the pooling screens, double quotes and single quotes were not supported 	Stored processes in Data/bisdata/storedprocs/pooling	NA
37.	There were errors related to Internationalization for macros and stored processes	All the macros and stored processes mentioned in table 2.2.3.3, 2.2.3.5 and 2.2.3.6 having values in 'Type of Error' column as 'Internationalization'.	NA



Installation of Hot Fix 1 for Credit Scoring for Banking 4.3

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3.1 Overview of Installation

This chapter details the procedure for installing Hot Fix 1 for SAS® Banking Intelligence Solutions. This chapter does not describe the installation procedure for software components that are a prerequisite for this installation.

3.1.1 Creating a Backup

Before starting the installation of this hot fix, shut down the Metadata server and backup the following:

- Data/bisdata folder
- Metadata server: Foundation repository stored at the location <SAS Configuration path>/<Level>/SASMain/MetadataServer/MetadataRepositories

This will enable you to rollback in case you face any problems during the installation. After the backup restart the Metadata server and Object spawner.

3.2 Installation Procedure on Server

This section explains the installation procedure for the hot fix on the server and via the client, for both Windows and UNIX. Follow the instructions from one of the sub-sections below depending on whether the operating system on the server is Windows/UNIX.

3.2.1 Installation on Windows Server

Note: This document assumes that the name given to the Application Server Context is `SASMain`. In case your application server context is not `SASMain`, replace references to the server context `SASMain` in this document with your application server context.

Take the backup as detailed in section 4.1.1 and then proceed with the hot fix.

To install the hot fix on a Windows Server, extract the file `bis_crs_4.3_hf1_installable_server_for_windows.zip` to the Data folder in the `SASMain` folder, which exists under the SAS Installation folder. Refer to the list of files that will be added or replaced, as mentioned in section 2.2.3 below, before extraction.

Note: Extract the contents of the zip file at the location that was used when the installation was performed earlier. Check if permissions are available on all folders and files in the Data folder.

3.2.2 Installation on UNIX Server

Note: This document assumes that the name given to the Application Server Context is `SASMain`. In case your application server context is not `SASMain`, Replace references to the server context `SASMain` in this document with your application server context.

Take the backup as detailed in section 4.1.1 and then proceed with the hot fix.

To install the hot fix on a UNIX Server, extract the file `bis_crs_4.3_hf1_installable_server_for_unix.tar.gz` to the Data folder in the `SASMain` folder, which exists under the SAS Installation folder. Refer to the list of files that will be added or replaced, as mentioned in section 2.2.3 below, before extraction.

Note: Extract the contents of the zip file at the location that was used when the installation was performed earlier. Check if permissions are available on all folders and files in the Data folder.

During this process, depending on the command and user settings, you may be asked to confirm whether certain files can be overwritten. Click **Yes** to replace files. Refer to the following section for a list of files that will be created or replaced.

3.2.3 List of Files Added or Replaced

The following tables list the name and path of the files that are added or replaced as a result of the installation of Hot Fix 1 for Credit Scoring for Banking 4.3. Please note that if the files are touched for multiple types of errors, the type of error is intentionally left as blank.

Table 2. Autoexec Files

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata	autoexec.sas	Replace	Internationalization
Data/bisdata	autoexec_crs.sas	Replace	

Table 3. Code Files

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/code	all_include_credit_scoring.sas	Replace	Internationalization
Data/bisdata/code/foundation_job_dependency	crs_hfl_fnd_mart_insert.sas	Add	New job dependency
Data/bisdata/code/foundation_job_dependency	star_credit_scoring_job_dependency.sas	Replace	Job dependency change
Data/bisdata/code/framework_script	crs_hfl_abt_metadata.sas	Add	ABT Framework script
Data/bisdata/code/framework_script	abt_purpose_crs.sas	Replace	ABT Framework script
Data/bisdata/code/framework_script	abt_purpose_x_level_crs.sas	Replace	ABT Framework script
Data/bisdata/code/framework_script	abt_purpose_x_product_crs.sas	Replace	ABT Framework script
Data/bisdata/code/framework_script	outcome_master.sas	Replace	ABT Framework script
Data/bisdata/code/framework_script	outcome_master_sub.sas	Replace	ABT Framework script
Data/bisdata/code/optional/dds	Analytical_model_type.sas	Add	Sample DDS data
Data/bisdata/code/optional/dds	Financial_product_type.sas	Add	Sample DDS data
Data/bisdata/code/optional/dds	Model_deployment.sas	Add	Sample DDS data
Data/bisdata/code/parameter	crs_hfl_parameter_script.sas	Add	Additional parameters

Path under server context SASMain folder	Affected File Name	Change s done	Type of Error
Data/bisdata/code/pooling_script	pool_menu_items.sas	Replace	Change in table structure

Table 4. Internationalization files

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/internationalization	bismsg.smd	Replace	Internationalization
Data/bisdata/internationalization	bismsg_config.smd	Add	Internationalization

Table 5. Deployed Code Files for ETL Jobs

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/jobs	ACC DEF EVENT CURR EXT.sas	Replace	Logic error
Data/bisdata/jobs	ACC DEF RCV 13 24M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC DEF RCV CURR LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC DEF RCV LST 12M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC DEF RCV LST 3M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC DEF RCV LST 6M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC DEF RCV LTD LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC INQ 13 24M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC INQ CURR LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC INQ LST 12M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC INQ LST 3M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC INQ LST 6M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND 13 24M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND COM FACT EXT 13 24M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND COM FACT EXT CURR.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND COM FACT EXT LST 12M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND COM FACT EXT LST 3M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND COM FACT EXT LST 6M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND CURR LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND LST 12M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND LST 3M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC OTBND LST 6M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP 12M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP 24M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP 3M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP 6M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP CURR ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT 12M BCK.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT 13 24M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT 13 24M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT 24M BCK.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT 3M BCK.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT 6M BCK.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT CURR.sas	Replace	ABT er1001920

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/jobs	ACC SNAP EXT LST 12M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT LST 12M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT LST 3M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT LST 3M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT LST 6M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT LST 6M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT LTD.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT LTD LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP EXT PRV.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP PRV ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC SNAP TIME LTD ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC TRANS EXT 13 24M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC TRANS EXT CURR MTH LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC TRANS EXT LST 12M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC TRANS EXT LST 3M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC TRANS EXT LST 6M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACC TRANS LTD LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACCOUNT SNAPSHOT.sas	Replace	Logic error
Data/bisdata/jobs	ACCOUNT SNAPSHOT PRE FACT.sas	Replace	Logic error
Data/bisdata/jobs	ACCOUNT TRANS FACT EXT 13 24M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACCOUNT TRANS FACT EXT CURR.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACCOUNT TRANS FACT EXT LST 12M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACCOUNT TRANS FACT EXT LST 3M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACCOUNT TRANS FACT EXT LST 6M.sas	Replace	ABT er1001920
Data/bisdata/jobs	ACCOUNT TRANS FACT EXT LTD.sas	Replace	ABT er1001920
Data/bisdata/jobs	AM POOL SCHEME APS TRANSPOSED.sas	Replace	Logic error
Data/bisdata/jobs	APPEND ACCOUNTS.sas	Replace	Logic error
Data/bisdata/jobs	APPL APPT SUMMARY ABT.sas	Replace	Logic error
Data/bisdata/jobs	CAS EXT.sas	Replace	Logic error
Data/bisdata/jobs	CMS EXT.sas	Replace	Logic error
Data/bisdata/jobs	ControlABTModelJob.sas	Add	
Data/bisdata/jobs	CREDIT BUREAU DETAIL.sas	Replace	Logic error
Data/bisdata/jobs	CUS ACC SNAP LST 12M ABT.sas	Replace	Logic error
Data/bisdata/jobs	FINANCIAL PRODUCT PRE DIM.sas	Replace	Logic error
Data/bisdata/jobs	INQUIRY FACT EXT CURR.sas	Replace	ABT er1001920
Data/bisdata/jobs	INQUIRY FACT EXT LST 12M.sas	Replace	ABT er1001920
Data/bisdata/jobs	INQUIRY FACT EXT LST 13 24M.sas	Replace	ABT er1001920
Data/bisdata/jobs	INQUIRY FACT EXT LST 3M.sas	Replace	ABT er1001920
Data/bisdata/jobs	INQUIRY FACT EXT LST 6M.sas	Replace	ABT er1001920
Data/bisdata/jobs	INTERNAL ORG PRE DIM.sas	Replace	Logic error
Data/bisdata/jobs	LoopABTModelJob.sas	Add	
Data/bisdata/jobs	OTC RCV PER LGD ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP 12M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP 1M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP 2M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP 3M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP 6M BCK ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP CURR ABT.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT 12M BCK.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT 1M BCK.sas	Replace	ABT er1001920

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/jobs	OTE ACC SNAP EXT 2M BCK.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT 3M BCK.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT 6M BCK.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT CURR.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT LST 12M.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT LST 12M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT LST 3M.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT LST 3M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT LST 6M.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC SNAP EXT LST 6M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC TRANS EXT CURR MTH LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC TRANS EXT LST 12M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC TRANS EXT LST 3M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC TRANS EXT LST 6M LKP.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC TRANS FACT EXT CURR.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC TRANS FACT EXT LST 12M.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC TRANS FACT EXT LST 3M.sas	Replace	ABT er1001920
Data/bisdata/jobs	OTE ACC TRANS FACT EXT LST 6M.sas	Replace	ABT er1001920
Data/bisdata/jobs	PRP EXT.sas	Add	
Data/bisdata/jobs	RECOVERY FACT EXT CURR.sas	Replace	ABT er1001920
Data/bisdata/jobs	RECOVERY FACT EXT LST 12M.sas	Replace	ABT er1001920
Data/bisdata/jobs	RECOVERY FACT EXT LST 13 24M.sas	Replace	ABT er1001920
Data/bisdata/jobs	RECOVERY FACT EXT LST 3M.sas	Replace	ABT er1001920
Data/bisdata/jobs	RECOVERY FACT EXT LST 6M.sas	Replace	ABT er1001920
Data/bisdata/jobs	RECOVERY FACT EXT LTD.sas	Replace	ABT er1001920
Data/bisdata/jobs	SEGMENT DIM.sas	Replace	Logic error
Data/bisdata/jobs	ULN ACC SNAP 6M BCK ABT.sas	Replace	Logic error
Data/bisdata/jobs	MasterLoopStarSchemaJob.sas	Replace	Log file names
Data/bisdata/jobs	LoopStarSchemaJob.sas	Replace	Log file names
Data/bisdata/jobs	ControlStarSchemaJob.sas	Replace	Log file names
Data/bisdata/jobs	MasterLoopCreditScoringJob.sas	Replace	Log file names
Data/bisdata/jobs	LoopCreditScoringJob.sas	Replace	Log file names
Data/bisdata/jobs	ControlCreditScoringJob.sas	Replace	Log file names
Data/bisdata/jobs	MasterLoopModelingABTJob.sas	Replace	Log file names
Data/bisdata/jobs	LoopModelingABTJob.sas	Replace	Log file names
Data/bisdata/jobs	ControlModelingABTJob.sas	Replace	Log file names
Data/bisdata/jobs	MasterLoopPoolingABTJob.sas	Replace	Log file names
Data/bisdata/jobs	LoopPoolingABTJob.sas	Replace	Log file names
Data/bisdata/jobs	ControlPoolingABTJob.sas	Replace	Log file names
Data/bisdata/jobs	MasterLoopScoringABTJob.sas	Replace	Log file names
Data/bisdata/jobs	LoopScoringABTJob.sas	Replace	Log file names
Data/bisdata/jobs	ControlScoringABTJob.sas	Replace	Log file names

Table 6. Macro code

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/macro	change_dataset_name.sas	Replace	Internationalization
Data/bisdata/macro	format_for_model_product.sas	Replace	Internationalization
Data/bisdata/macro/analytics	build_level_format.sas	Replace	Internationalization
Data/bisdata/macro/analytics	build_score_abt.sas	Replace	
Data/bisdata/macro/analytics	build_scr_aggr_tables.sas	Replace	
Data/bisdata/macro/analytics	create_abt.sas	Replace	
Data/bisdata/macro/analytics	create_scr_abt.sas	Replace	
Data/bisdata/macro/analytics	get_model_details.sas	Replace	Internationalization
Data/bisdata/macro/analytics	select_abt_vars_screen_links.sas	Replace	Internationalization
Data/bisdata/macro/analytics	select_models_to_build.sas	Replace	Internationalization
Data/bisdata/macro/analytics	write_back_dd.sas	Replace	
Data/bisdata/macro/computations/common	ci.sas	Replace	Internationalization
Data/bisdata/macro/computations/common	defdata.sas	Replace	Internationalization
Data/bisdata/macro/computations/common	ssi.sas	Replace	Internationalization
Data/bisdata/macro/computations/lgdccf	ccf_ci.sas	Replace	Internationalization
Data/bisdata/macro/computations/lgdccf	lgd_ci.sas	Replace	Internationalization
Data/bisdata/macro/computations/modelinputs	shift_indices.sas	Replace	Internationalization
Data/bisdata/macro/computations/modelinputs	stability_indices.sas	Replace	Internationalization
Data/bisdata/macro/computations/pd	lift_chart.sas	Replace	Internationalization
Data/bisdata/macro/computations/pd	pd_ci.sas	Replace	Internationalization
Data/bisdata/macro/computations/pd	pd_vs_defaultrate.sas	Replace	Internationalization
Data/bisdata/macro/computations/pd	ssi_app.sas	Replace	Internationalization
Data/bisdata/macro/display	draw_table.sas	Replace	Internationalization
Data/bisdata/macro/display	draw_table_feed.sas	Replace	Internationalization
Data/bisdata/macro/display	feed_table.sas	Replace	Internationalization
Data/bisdata/macro/display	graph_options.sas	Replace	Internationalization
Data/bisdata/macro/display	pool_technique.sas	Replace	Internationalization

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/macro/display	statistic_overtime.sas	Replace	Internationalization
Data/bisdata/macro/factupdatations	load_aplplpd_model_measure_fact.sas	Replace	Changes for fact update
Data/bisdata/macro/factupdatations	load_ccf_model_measure_fact.sas	Replace	Changes for fact update
Data/bisdata/macro/factupdatations	load_lgd_model_measure_fact.sas	Replace	Changes for fact update
Data/bisdata/macro/factupdatations	load_model_measure_fact.sas	Replace	Changes for fact update
Data/bisdata/macro/factupdatations	load_pd_model_measure_fact.sas	Replace	Changes for fact update
Data/bisdata/macro/factupdatations	load_pd_score_card_variable_fact.sas	Replace	Changes for fact update
Data/bisdata/macro/factupdatations	load_score_card_variable_fact.sas	Replace	Changes for fact update
Data/bisdata/macro/feemacros	feed_ccf_dynamic.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_ccf_long_run.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_ccf_pool.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_lgd_dynamic.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_lgd_long_run.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_lgd_pool.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_pd_appl_dynamic.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_pd_appl_pool.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_pd_dynamic.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_pd_long_run.sas	Replace	Internationalization
Data/bisdata/macro/feemacros	feed_pd_pool.sas	Replace	Internationalization
Data/bisdata/macro/feemacrosmip	feed_ccf_pool_mip.sas	Replace	Internationalization
Data/bisdata/macro/feemacrosmip	feed_lgd_pool_mip.sas	Replace	Internationalization
Data/bisdata/macro/feemacrosmip	feed_pd_appl_pool_mip.sas	Replace	Internationalization
Data/bisdata/macro/feemacrosmip	feed_pd_pool_mip.sas	Replace	Internationalization
Data/bisdata/macro/internationalization	smd2ds.sas	Replace	Internationalization
Data/bisdata/macro/pooling	build_all_abt.sas	Replace	Internationalization

Table 7. Stored Process code

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/storedprocs/analytcs	build_abt.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs	model_monitoring.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	add_var.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	ch_job_details.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	delete_var.sas	Replace	
Data/bisdata/storedprocs/analytcs /explore_abt	disp_var.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	edit_var.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	edit_var_upd.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	expabt_create_tree.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	expabt_header.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	explore_abtvars.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	job_details.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /explore_abt	save_add_var.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /pop_am	pop_am_dds.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /pop_am	save_am.sas	Replace	
Data/bisdata/storedprocs/analytcs /scoring	schedule_scr_process.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /scoring	scr_template_step1.sas	Replace	
Data/bisdata/storedprocs/analytcs /scoring	scr_template_step2.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /scoring	scr_template_step3.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /scoring	scr_template_step4.sas	Replace	
Data/bisdata/storedprocs/analytcs /scoring	scrabts.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /templates	build_md1_abt.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /templates	link_md1.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /templates	menubar.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /templates	template_step1.sas	Replace	
Data/bisdata/storedprocs/analytcs /templates	template_step2.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /templates	template_step3.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /templates	template_step4.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /templates	template_step5.sas	Replace	Internationalization
Data/bisdata/storedprocs/analytcs /templates	templates.sas	Replace	Internationalization
Data/bisdata/storedprocs/ccf	cap_ccf.sas	Replace	Internationalization
Data/bisdata/storedprocs/ccf	con_interval_ccf.sas	Replace	Internationalization
Data/bisdata/storedprocs/ccf	correlation_ccf.sas	Replace	Internationalization

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/storedprocs/ccf	mape_ccf.sas	Replace	Internationalization
Data/bisdata/storedprocs/ccf	misc_report_ccf.sas	Replace	Internationalization
Data/bisdata/storedprocs/ccf	stability_index_ccf.sas	Replace	Internationalization
Data/bisdata/storedprocs/common	filtering_criteria.sas	Replace	Internationalization
Data/bisdata/storedprocs/common	measure_config.sas	Replace	Internationalization
Data/bisdata/storedprocs/common	model_in_var.sas	Replace	Internationalization
Data/bisdata/storedprocs/common	mon_model_inputs.sas	Replace	Internationalization
Data/bisdata/storedprocs/common	mon_models.sas	Replace	Internationalization
Data/bisdata/storedprocs/common	reporting.sas	Replace	Internationalization
Data/bisdata/storedprocs/common	select_models.sas	Replace	Internationalization
Data/bisdata/storedprocs/common	test_levels.sas	Replace	Internationalization
Data/bisdata/storedprocs/conf	create_tree.sas	Replace	Internationalization
Data/bisdata/storedprocs/lgd	cap_lgd.sas	Replace	Internationalization
Data/bisdata/storedprocs/lgd	con_interval_lgd.sas	Replace	Internationalization
Data/bisdata/storedprocs/lgd	correlation_lgd.sas	Replace	Internationalization
Data/bisdata/storedprocs/lgd	mape_lgd.sas	Replace	Internationalization
Data/bisdata/storedprocs/lgd	misc_report_lgd.sas	Replace	Internationalization
Data/bisdata/storedprocs/lgd	stability_index_lgd.sas	Replace	Internationalization
Data/bisdata/storedprocs/modelinputs	info_val.sas	Replace	Internationalization
Data/bisdata/storedprocs/modelinputs	ks_mip.sas	Replace	Internationalization
Data/bisdata/storedprocs/modelinputs	model_attrib.sas	Replace	Internationalization
Data/bisdata/storedprocs/modelinputs	model_attrib_event.sas	Replace	Internationalization
Data/bisdata/storedprocs/modelinputs	shift_index.sas	Replace	Internationalization
Data/bisdata/storedprocs/modelinputs	variable_stability_index.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	bnt_traffic.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	cap.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	con_interval.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	conf_matrix.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	gains.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	graph_fraction.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	index.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	ks.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	misc_report.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	roc.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	score_validation.sas	Replace	Internationalization
Data/bisdata/storedprocs/pd	stability_index.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	build_scheme_data.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	build_scheme_pd_lgd_ccf_pool.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	build_scheme_pd_lgd_pool.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	build_scheme_pd_pool.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	build_scheme_rating_pool.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	build_scheme_score_pool.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	create_master_scale.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	deploy_pool_scheme.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	pool_introduction.sas	Replace	Internationalization

Path under server context SASMain folder	Affected File Name	Changes done	Type of Error
Data/bisdata/storedprocs/pooling	pool_main.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	pool_menu.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	select_master_scale.sas	Replace	Internationalization
Data/bisdata/storedprocs/pooling	view_scheme.sas	Replace	Internationalization

3.3 File Configurations

3.3.1 Configuring autoexec.sas File

In the autoexec.sas file include the file autoexec_crs.sas. This can be done by including the following code at the end of the autoexec.sas file.

Relative Path

```
%include "Data/bisdata/autoexec_crs.sas";
```

Absolute Path

```
%include "<SAS Configuration path>/<Level>/SASMain/Data/bisdata/autoexec_crs.sas";
```

3.3.2 Configuring the Stored Process Server on Windows

The procedure to make changes in the Stored Process Server options through SAS Management Console is described below:

1. Open SMC and log on with administrative privileges.

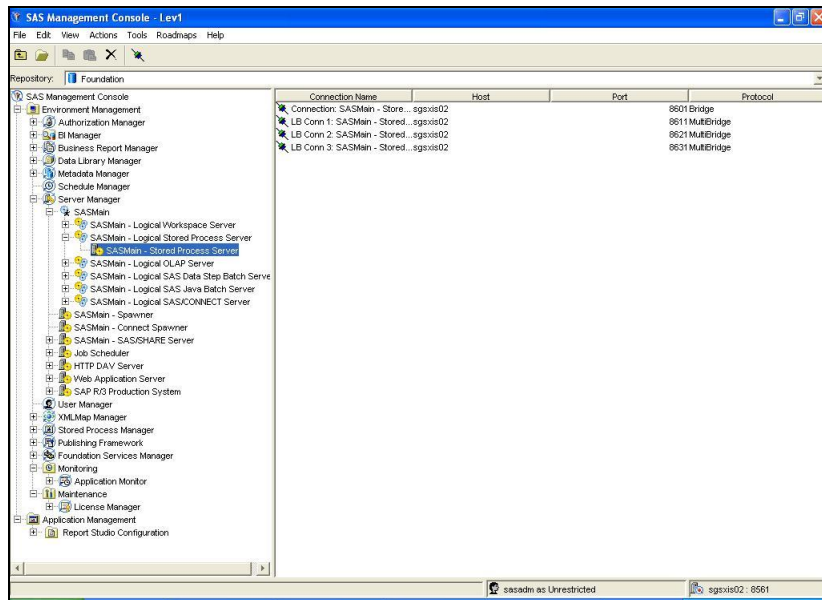


Figure 1. SAS Management Console

2. In SMC, expand Server Manager→SASMain→ SASMain - Logical Stored Process Server→SASMain – Stored Process Server.

- Right-click SASMain – Stored Process Server and click Properties. The Stored Process Server Properties window is displayed.

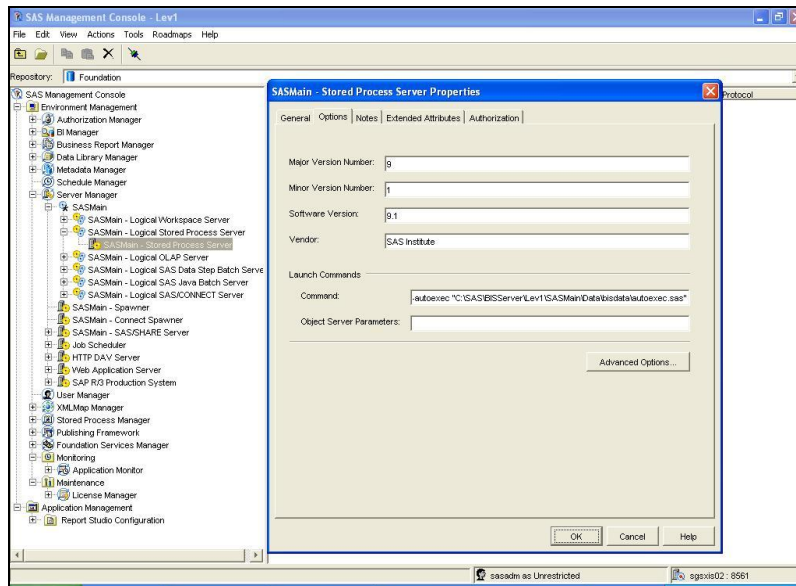


Figure 2. Stored Process Server Properties

- On the Stored Process Server Properties window, click the Options tab and replace the text in the Command field with the following.
- Check the text. If this text is using sasv9.cfg instead of the following text, replace the existing text, by:

```

sas -config "<SAS Configuration
path>/<Level>/SASMain/StoredProcessServer/sasv9_StorProcSrv.c
fg" -autoexec "<SAS Configuration
path>/<Level>/SASMain/Data/bisdata/autoexec.sas"

```

Note: Make changes to the paths, so as to point to the actual location of the files on the server. Absolute path needs to be specified.

- On the Stored Process Server Properties window, click OK.
- Restart the Object Spawner.
- Right-click the connection and click Test Connection to ensure success.

3.3.3 Library Names

Make sure that the following library names used while installing the Credit Scoring Sample Models (as mentioned in Installation document, Section 5.2.2) are changed as mentioned below.

For using Behavioral Credit Scoring model, use the following path:-

```

libname smpl_md1
'Data/bisdata/pd_behavior_sample_model/DataSources';

```

For using Application Credit Scoring model, use the following path:-

```

libname smpl_md1 'Data/bisdata/pd_
application_sample_model/DataSources';

```

For using Credit Conversion Factor model, use the following path:-

```

libname smpl_md1 'Data/bisdata/ccf_sample_model/DataSources';

```

For using Loss Given Default model, use the following path:-

```

libname smpl_md1 'Data/bisdata/lgd_sample_model/DataSources';

```

3.3.4 Deployed Jobs Changes

In order to run the jobs from ABT Framework, the following line from all deployed jobs needs to be removed or commented.

```
%global job_rc trans_rc sqlrc;
```

3.4 Creating Datasets for Configuration and Sample Data

The procedure to create configuration and sample datasets is detailed below.

1. Open SAS® Data Integration Studio.
2. Go to Tools Menu → Source Editor.

3.4.1 Parameter Configuration

As part of the Hot Fix installation procedure on the server, the file `crs_hf1_parameter_script.sas` would have been copied to the `Data/bisdata/code/param` directory.

1. Make sure that you have backed up the datasets `parameter`, `parameter_x_category`, `parameter_category` located at `Data/bisdata/param`.
2. Run the following code in DI Studio - Source Editor:

```
%include
"Data/bisdata/code/parameter/crs_hf1_parameter_script.sas";
```

This code will update the existing parameters and also insert new parameters needed for job `PRP_EXT`.

3.4.2 Foundation Job Dependency

As part of the Hot Fix installation procedure on the server, the file `crs_hf1_fnd_mart_insert.sas` would have been copied to the `Data/bisdata/code/foundation_job_dependency` directory.

1. Make sure that you have backed up the dataset `parameter_list_star_schema` located at `Data/bisdata/control`.
2. Run the following code in DI Studio - Source Editor:

```
%include
"Data/bisdata/code/foundation_job_dependency/crs_hf1_fnd_mart_inser
t.sas";
```

This code will insert information of a new job `PRP_EXT` in the above mentioned dataset.

3.4.3 Credit Scoring Job Dependency

As part of the Hot Fix installation procedure on the server, the file `star_credit_scoring_job_dependency.sas` would have been replaced in the `Data/bisdata/code/foundation_job_dependency` directory.

1. Make sure that you have backed up the dataset `parameter_list_credit_scoring` located in `Data/bisdata/control` folder.
2. Delete the above dataset.
3. Run the following code in DI Studio - Source Editor:

```
%include
  "Data/bisdata/code/foundation_job_dependency/star_credit_scoring_jo
  b_dependency.sas";
```

This code will create a new dataset as mentioned above.

3.4.4 bismsg.smd file

As part of the Hot Fix installation procedure on the server, the file `bismsg.smd` would have been replaced and a new file `bismsg_config.smd` would have been copied in the `Data/bisdata/internationalization` directory.

`bismsg.smd` file is used to store the messages or titles used displayed on the screen. This file has the keys and the text for the keys written in this file. E.g. A line in the file is as follows
`crs.create_tree.title.1=Filter Screen`

Here “`crs.create_tree.title.1`” is termed as key and “`Filter Screen`” is termed as text. For internationalization, translate the text strings mentioned in this file in the localized language. The key should not be changed.

All the English keys (used in the logic) that should not be localized are present in `bismsg_config.smd`. The contents of this file should not be changed.

Note: Please note that if you have already run the `all_include_script`, have already created the `bismsg` dataset at the above location and you are not interested in the internationalization and localized messages, then it is not necessary to perform this step.

1. Make sure that you have backed up the dataset and index file `bismsg.sas7bdat` and `bismsg.sas7bndx` located in `Data/bisdata/internationalization/en` folder. Also ensure you translate the text strings in `bismsg.smd` in the localized language as mentioned above.
2. Delete the above dataset.
3. Run the following code in DI Studio - Source Editor:

```
libname smd_ds 'Data/bisdata/internationalization/en';
%include "Data/bisdata/macro/internationalization/smd2ds.sas";
%smd2ds (DIR=Data/bisdata/internationalization/,BASENAME=bismsg,LO
CALE=,LIB=smd_ds);
%smd2ds (DIR=Data/bisdata/internationalization/,BASENAME=bismsg_c
onfig,LOCALE=,LIB=smd_ds);
proc append base=smd_ds.bismsg data=smd_ds.bismsg_config;
run;
```

Note: This code will create new dataset `bismsg.sas7bdat` and `bismsg.sas7bndx` located in `Data/bisdata/internationalization/en` folder. Ensure you run the entire code in a single sas session. Restart the object spawner to ensure changes to the messages or labels.

3.4.5 ABT Metadata

As part of the Hot Fix installation procedure on the server, the file `crs_hf1_abt_metadata.sas` would have been copied to the `Data/bisdata/code/frame_work_script` directory.

1. Make sure that you have backed up the following datasets located at `Data/bisdata/analytics`.

- `var_master`
- `abt_purpose`
- `abt_purpose_x_level`
- `abt_purpose_x_product`
- `outcome_master`
- `outcome_master_sub`

2. Run the following code in DI Studio - Source Editor:

```
%include
"Data/bisdata/code/frame_work_script/crs_hf1_abt_metadata.sas";
```

- This code will update the information in `var_master` dataset.
- **For all other datasets mentioned above (i.e. `abt_purpose`, `abt_purpose_x_level`, `abt_purpose_x_product`, `outcome_master`, `outcome_master_sub`), the code will delete the existing data and insert new data into them.**
- This code also creates a dataset `PARAMETER_LIST_MODEL_JOBS` in `CONTROL` library.

3.4.6 Pooling functionality

As part of the Hot Fix installation procedure on the server, the file `pool_menu_items.sas` would have been copied to the `Data/bisdata/code/pooling_script` directory.

1. Make sure that you have backed up the dataset `pool_menu_items` located at `Data/bisdata/pool`.
2. Delete the above dataset.
3. Run the following code in DI Studio - Source Editor:

```
%include "Data/bisdata/code/pooling_script/pool_menu_items.sas";
```

This code will create a new dataset as mentioned above.

3.4.7 Changing Fonts

1. If you want to use the local fonts for the graphs, make the following changes.
2. Edit file `graph_options.sas` at the location `Data/bisdata/macro/display`.

Inside this file option for English language, the following line is specified

```
ftitle=swissb ftext=simplex
```

This could be replaced for other languages E.g. to set font for Japanese version, the above line should be changed to :

```
ftitle='mincho' ftext='mincho'.
```

Restart the object spawner after doing the changes to see the changed fonts.

3.4.8 DDS Sample datasets for creating formats

As part of the Hot Fix installation procedure on the server, **the file**, a new directory `optional/dds` would have been created and the datasets `analytical_model_type.sas`, `financial_product_type.sas`, and `model_deployment.sas` would have been copied in this directory. These datasets have the scripts to create the demo data for the **above mentioned** tables.

Note: It is very important to ensure that there is no duplication due to existing data in the DDS tables - `analytical_model_type`, `financial_product_type`, `model_deployment` and the data created by the following scripts. In the event of duplication for the above tables, it will cause other jobs to fail since the formats are used by many jobs.

If you want to use this sample demo data, run the above scripts by using the following code and create the datasets into `Data/bisdata/dds` folder.

```
%include "Data/bisdata/code/optional/dds/analytical_model_type.sas";
%include "Data/bisdata/code/optional/dds/financial_product_type.sas";
%include "Data/bisdata/code/optional/dds/model_deployment.sas";
```

After you create the data, the initial one time jobs mentioned in the Usage guide need to be run to create the formats.

Note: Please note that this is an optional step and you can carry out this only if you want to use the demo data.

3.5 Installation via Client

The next step is importing the metadata.

Note: Importing metadata is a resource intensive process. It is advisable to keep all other applications and services/daemon closed during the import process. Verification of imported data should be done in the reopened DI Studio environment.

The procedure to import metadata for the changed jobs is as follows:

1. Extract the `bis_crs_4.3_hf1_installable_client.zip` at a location that can be referred to later during the installation.
2. Henceforth, this location will be referred to as `<ZIP_EXTRACTED_LOCATION>`.

3.5.1 ETL Installation for Foundation Mart and Credit Scoring Additions

The procedure for the ETL installation of the Foundation Mart and the Credit Scoring Additions is as follows:

1. Open the DI Studio environment.
2. Backup and delete the following jobs:

Table 8. Foundation Mart Jobs for Backup and deletion

Job Name
ACCOUNT_SNAPSHOT
ACCOUNT_SNAPSHOT_PRE_FACT
AM_POOL_SCHEME_APS_TRANSPOSED
APPEND_ACCOUNTS
CAS_EXT
CMS_EXT
CREDIT_BUREAU_DETAIL
FINANCIAL_PRODUCT_PRE_DIM
Formats_for_model_monitoring_report
INTERNAL_ORG_PRE_DIM
SEGMENT_DIM
USER_DEFINED_FORMAT_CREATION
MasterLoopModelingABTJob
LoopModelingABTJob
ControlModelingABTJob
MasterLoopPoolingABTJob
LoopPoolingABTJob
ControlPoolingABTJob
MasterLoopScoringABTJob
LoopScoringABTJob
ControlScoringABTJob
MasterLoopStarSchemaJob
LoopStarSchemaJob
ControlStarSchemaJob
MasterLoopCreditScoringJob
LoopCreditScoringJob
ControlCreditScoringJob

3. To start importing the .spk package right-click SAS Data Integration Studio Custom Tree folder and click Import on the menu as shown below.

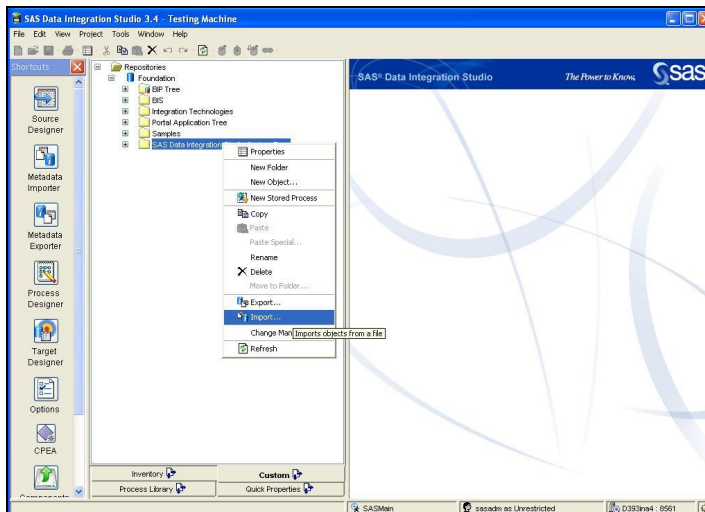


Figure 3. Import Wizard

4. The Import Wizard window is displayed.
5. Click Browse on Import Wizard window, open <ZIP_EXTRACTED_LOCATION> and select the file bis_crs_4.3_hf1_fnd_crs_add_etl.spk as shown below:

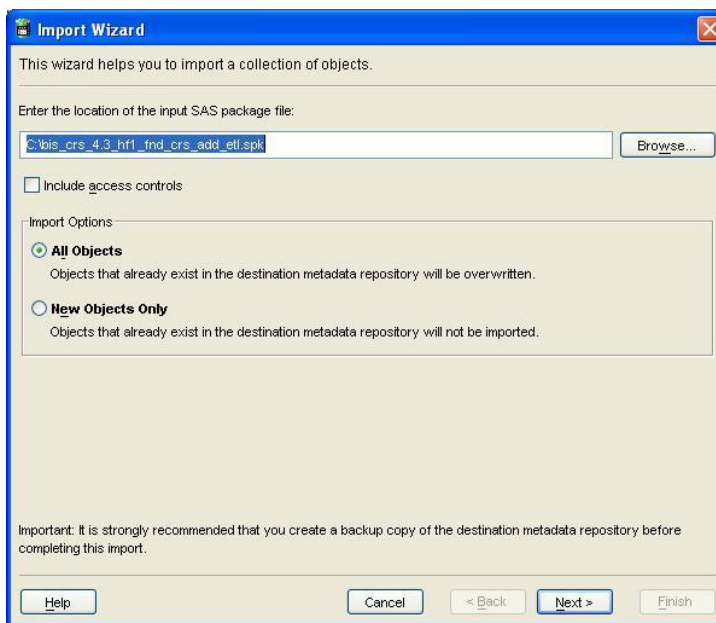


Figure 4. Import Wizard – select location

6. Under Import Options select All Objects. Do not select the Include Access Control checkbox.

7. Click **Next** on the Import Wizard window. The objects to be imported are displayed in the window as shown below:

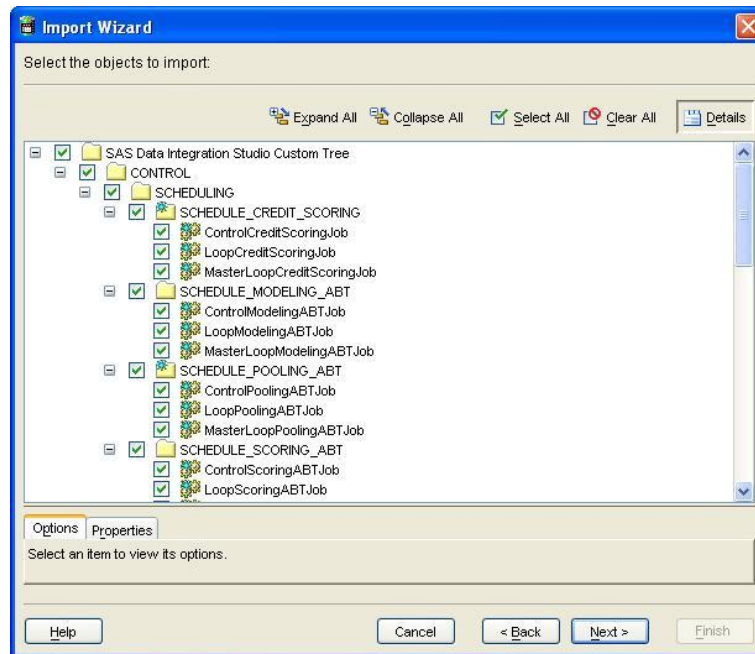


Figure 5. Import Wizard – Object to be imported

8. Click **Next** on the Import Wizard window.

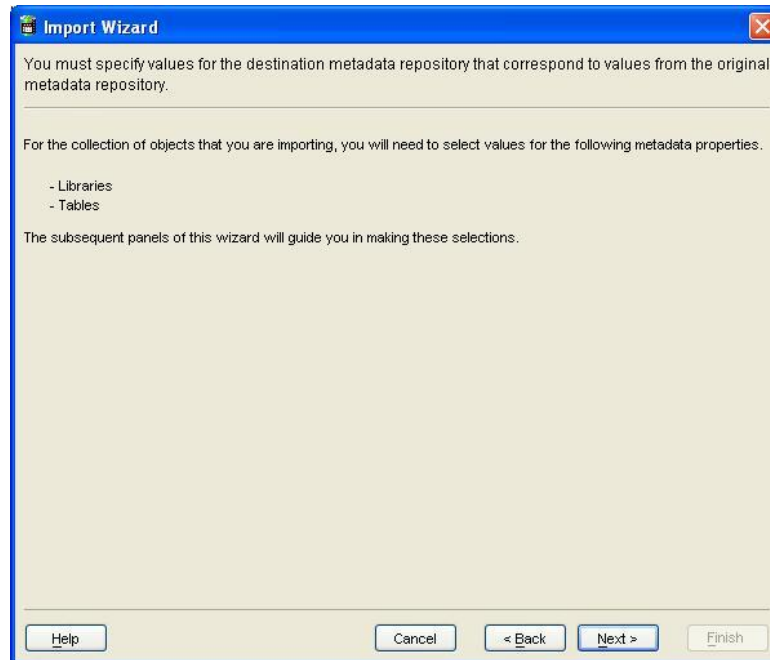


Figure 6. Import Wizard – Libraries and Tables summary

- Click Next. The target locations are displayed in the window as shown below.

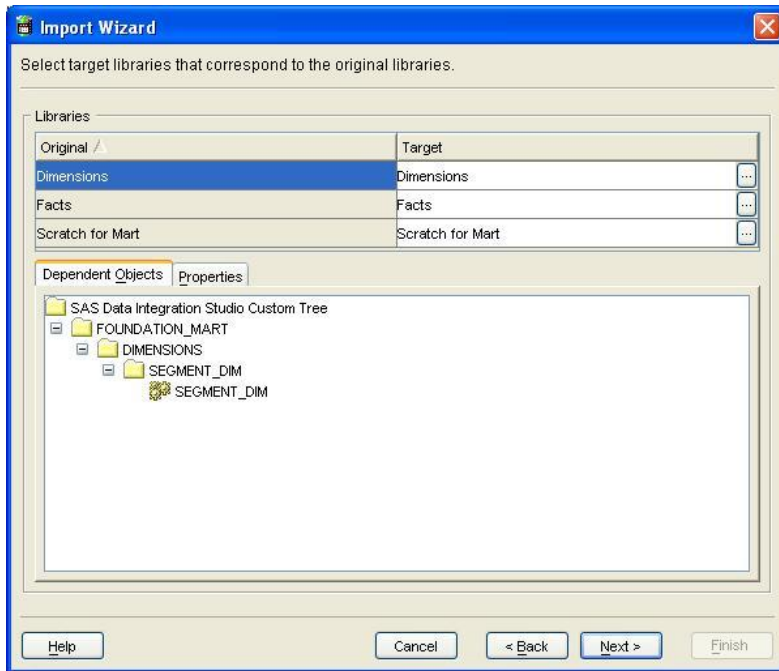


Figure 7. Import Wizard – Target locations

- Select target tables and then click Next.

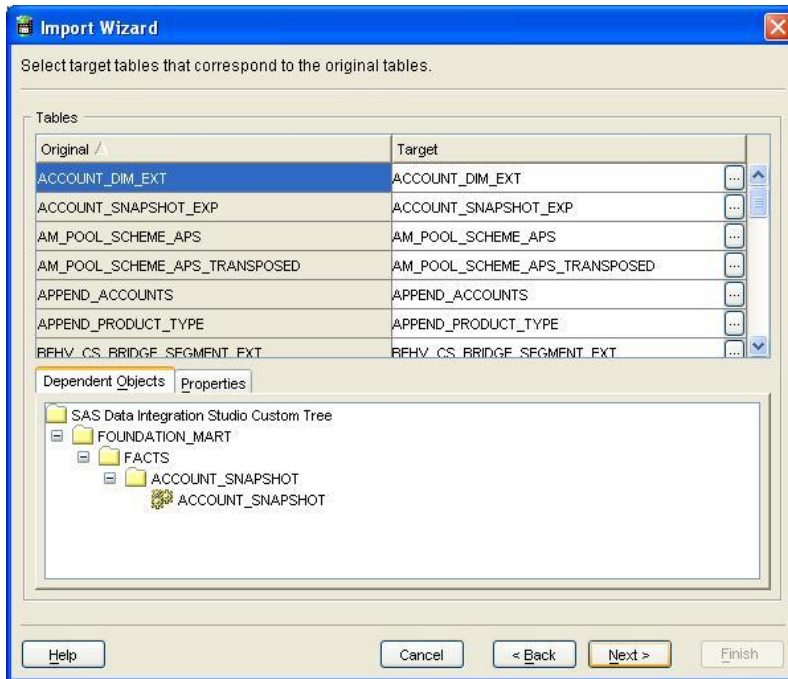


Figure 8. Import Wizard – Select Target tables

11. A summary of the values specified is displayed in the window as shown below.

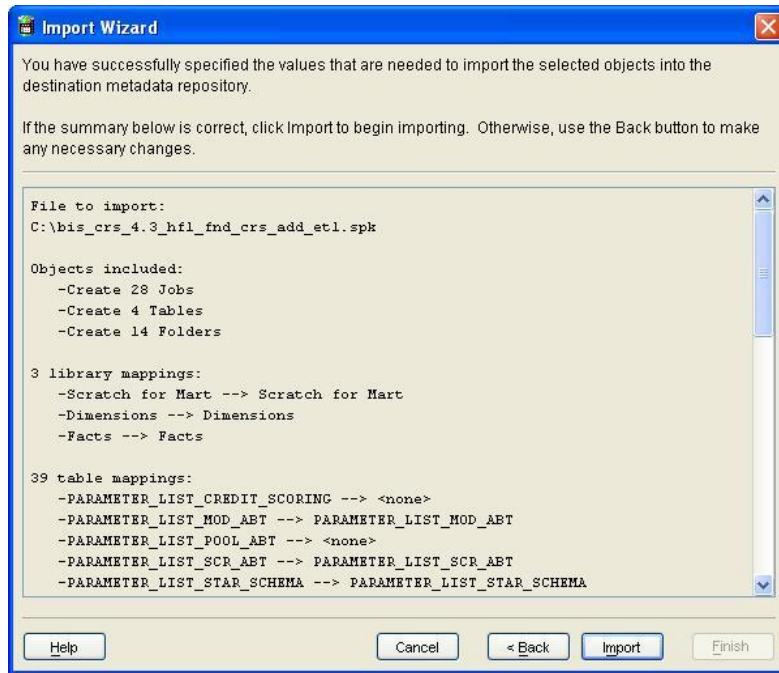


Figure 9. Import Wizard – Summary of values specified

12. To start the import process, click Import. A progress indicator is displayed in the window.

13. On successful completion of import, the Import Wizard window displays a completion message as shown below.

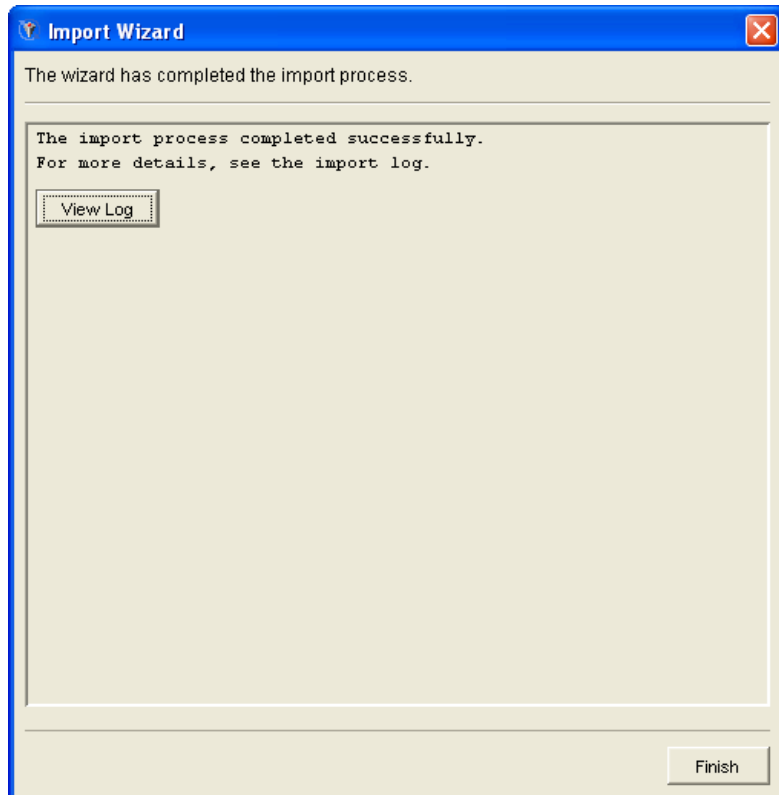


Figure 10. Import Wizard – Completion Message

14. Click Finish to close the window. All the objects will be imported into the DI Studio Environment.

15. In case an error appears, click View Log on the Import Wizard window, to view the error descriptions.
16. After the import procedure is completed, make sure that the EMPLOYEE_RK field is set to NULLABLE (yes) in the table metadata. The changes should be made in the following jobs.

```

FA_UP_SELL_L
FA_FARST_L
FA_CBAC_L
FA_CBA_L
FA_MAC_L
FA_CUSXFA_FPA_FP_L
FA_MCMP_L
FA_CCAC_L
FA_TRANS_L
FA_DE_L
FA_FAC_L
FA_EXT
    
```

3.5.2 ETL Installation for ABT

1. Open the DI Studio environment. Backup and delete the following jobs.

Table 9. ABT Jobs for Backup and deletion

Job Name
ACC_DEF_EVENT_CURR_EXT
ACC_DEF_RCV_13_24M_LKP
ACC_DEF_RCV_CURR_LKP
ACC_DEF_RCV_LST_12M_LKP
ACC_DEF_RCV_LST_3M_LKP
ACC_DEF_RCV_LST_6M_LKP
ACC_DEF_RCV_LTD_LKP
ACC_INQ_13_24M_LKP
ACC_INQ_CURR_LKP
ACC_INQ_LST_12M_LKP
ACC_INQ_LST_3M_LKP
ACC_INQ_LST_6M_LKP
ACC_OTBND_13_24M_LKP
ACC_OTBND_COM_FACT_EXT_13_24M
ACC_OTBND_COM_FACT_EXT_CURR
ACC_OTBND_COM_FACT_EXT_LST_12M
ACC_OTBND_COM_FACT_EXT_LST_3M
ACC_OTBND_COM_FACT_EXT_LST_6M
ACC_OTBND_CURR_LKP
ACC_OTBND_LST_12M_LKP
ACC_OTBND_LST_3M_LKP
ACC_OTBND_LST_6M_LKP
ACC_SNAP_12M_BCK_ABT
ACC_SNAP_24M_BCK_ABT

Job Name
ACC_SNAP_3M_BCK_ABT
ACC_SNAP_6M_BCK_ABT
ACC_SNAP_CURR_ABT
ACC_SNAP_EXT_12M_BCK
ACC_SNAP_EXT_13_24M
ACC_SNAP_EXT_13_24M_LKP
ACC_SNAP_EXT_24M_BCK
ACC_SNAP_EXT_3M_BCK
ACC_SNAP_EXT_6M_BCK
ACC_SNAP_EXT_CURR
ACC_SNAP_EXT_LST_12M
ACC_SNAP_EXT_LST_12M_LKP
ACC_SNAP_EXT_LST_3M
ACC_SNAP_EXT_LST_3M_LKP
ACC_SNAP_EXT_LST_6M
ACC_SNAP_EXT_LST_6M_LKP
ACC_SNAP_EXT_LTD
ACC_SNAP_EXT_LTD_LKP
ACC_SNAP_EXT_PRV
ACC_SNAP_PRV_ABT
ACC_SNAP_TIME_LTD_ABT
ACC_TRANS_EXT_13_24M_LKP
ACC_TRANS_EXT_CURR_MTH_LKP
ACC_TRANS_EXT_LST_12M_LKP
ACC_TRANS_EXT_LST_3M_LKP
ACC_TRANS_EXT_LST_6M_LKP
ACC_TRANS_LTD_LKP
ACCOUNT_TRANS_FACT_EXT_13_24M
ACCOUNT_TRANS_FACT_EXT_CURR
ACCOUNT_TRANS_FACT_EXT_LST_12M
ACCOUNT_TRANS_FACT_EXT_LST_3M
ACCOUNT_TRANS_FACT_EXT_LST_6M
ACCOUNT_TRANS_FACT_EXT_LTD
APPL_APPT_SUMMARY_ABT
CUS_ACC_SNAP_LST_12M_ABT
INQUIRY_FACT_EXT_CURR
INQUIRY_FACT_EXT_LST_12M
INQUIRY_FACT_EXT_LST_13_24M
INQUIRY_FACT_EXT_LST_3M
INQUIRY_FACT_EXT_LST_6M
OTC_RCV_PER_LGD_ABT
OTE_ACC_SNAP_12M_BCK_ABT
OTE_ACC_SNAP_1M_BCK_ABT
OTE_ACC_SNAP_2M_BCK_ABT
OTE_ACC_SNAP_3M_BCK_ABT
OTE_ACC_SNAP_6M_BCK_ABT
OTE_ACC_SNAP_CURR_ABT
OTE_ACC_SNAP_EXT_12M_BCK
OTE_ACC_SNAP_EXT_1M_BCK
OTE_ACC_SNAP_EXT_2M_BCK
OTE_ACC_SNAP_EXT_3M_BCK

Job Name
OTE_ACC_SNAP_EXT_6M_BCK
OTE_ACC_SNAP_EXT_CURR
OTE_ACC_SNAP_EXT_LST_12M
OTE_ACC_SNAP_EXT_LST_12M_LKP
OTE_ACC_SNAP_EXT_LST_3M
OTE_ACC_SNAP_EXT_LST_3M_LKP
OTE_ACC_SNAP_EXT_LST_6M
OTE_ACC_SNAP_EXT_LST_6M_LKP
OTE_ACC_TRANS_EXT_CURR_MTH_LKP
OTE_ACC_TRANS_EXT_LST_12M_LKP
OTE_ACC_TRANS_EXT_LST_3M_LKP
OTE_ACC_TRANS_EXT_LST_6M_LKP
OTE_ACC_TRANS_FACT_EXT_CURR
OTE_ACC_TRANS_FACT_EXT_LST_12M
OTE_ACC_TRANS_FACT_EXT_LST_3M
OTE_ACC_TRANS_FACT_EXT_LST_6M
RECOVERY_FACT_EXT_CURR
RECOVERY_FACT_EXT_LST_12M
RECOVERY_FACT_EXT_LST_13_24M
RECOVERY_FACT_EXT_LST_3M
RECOVERY_FACT_EXT_LST_6M
RECOVERY_FACT_EXT_LTD
ULN_ACC_SNAP_6M_BCK_ABT

- To start importing the .spk package right-click SAS Data Integration Studio Custom Tree folder and click Import on the menu that appears as shown below.

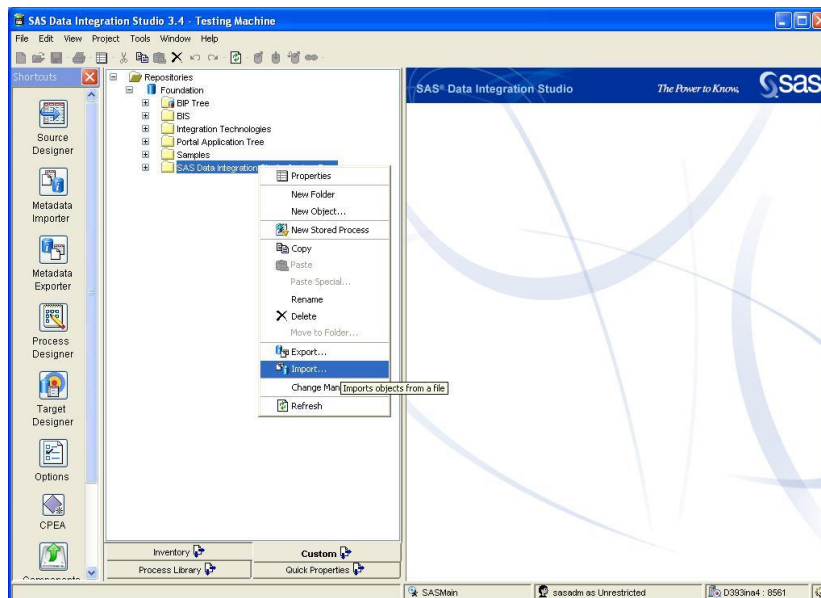


Figure 11. Import Wizard

- The Import Wizard window is displayed.

4. Click Browse on Import Wizard window, open <ZIP_EXTRACTED_LOCATION> and select the file bis_crs_4.3_hf1_abt_etl_package.spk as shown below.

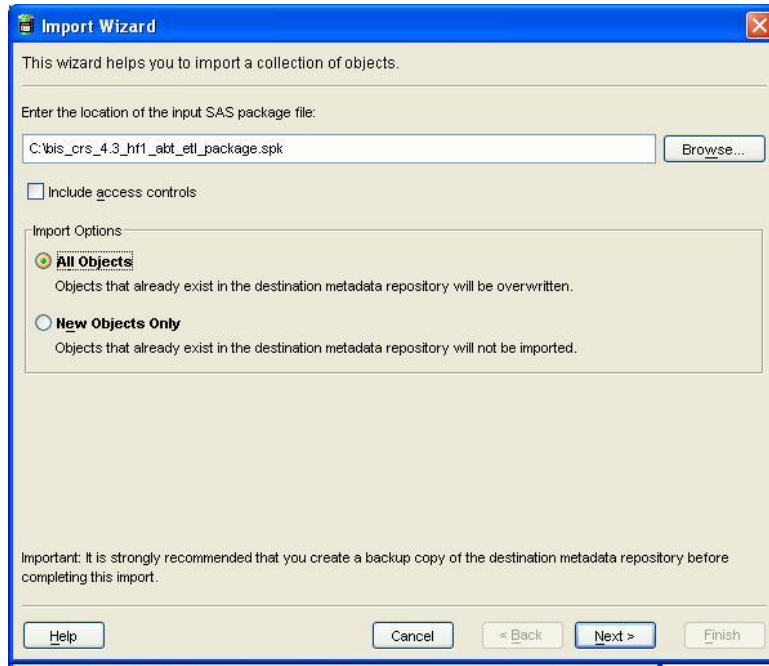


Figure 12. Import Wizard – select location

5. Under Import Options select All Objects. Do not select the Include Access Control checkbox.
6. Click Next on the Import Wizard window. The objects to be imported are displayed in the window as shown below.

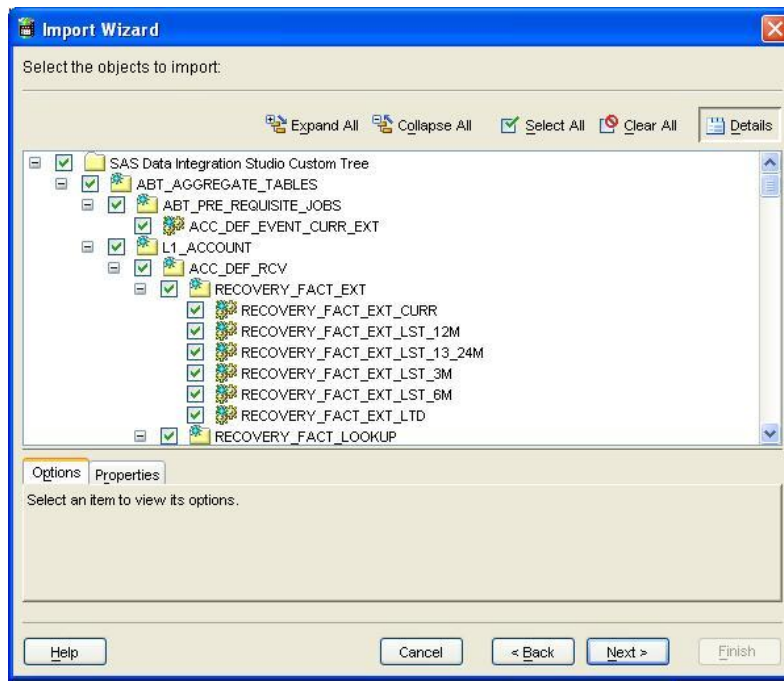


Figure 13. Import Wizard – Objects to Import

7. Click Next on the Import Wizard window.

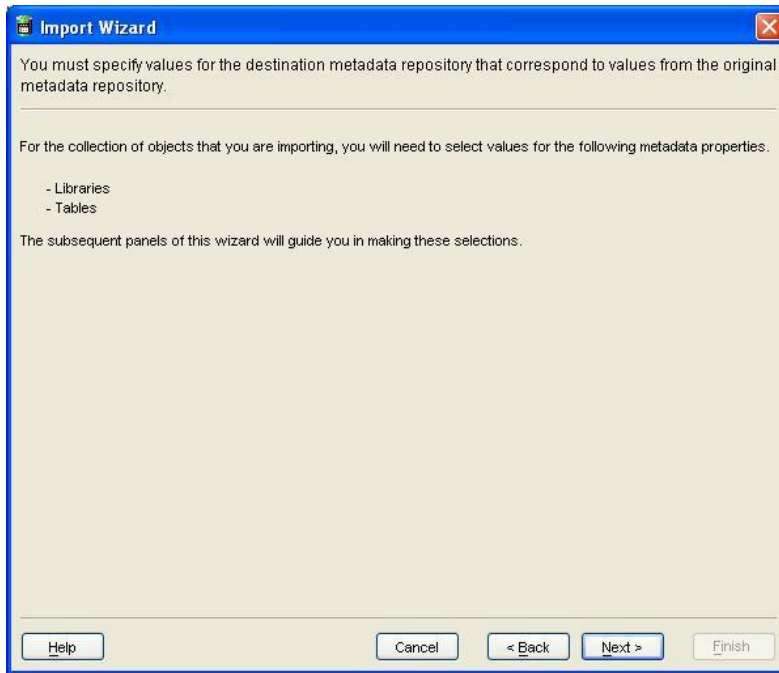


Figure 14. Import Wizard – Libraries and Tables summary

8. Click Next. The target locations are displayed in the window as shown below

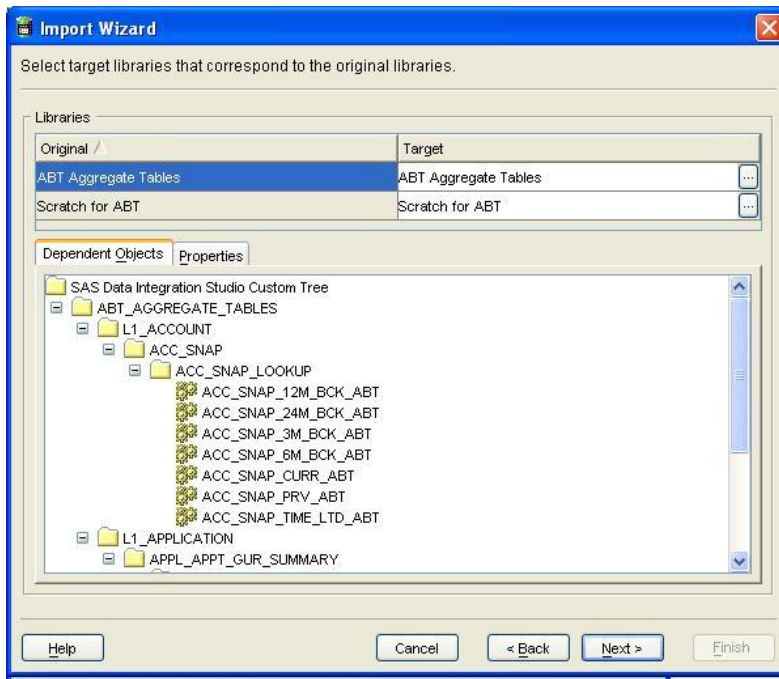


Figure 15. Import Wizard – Target Locations

9. Select target tables and then click Next.

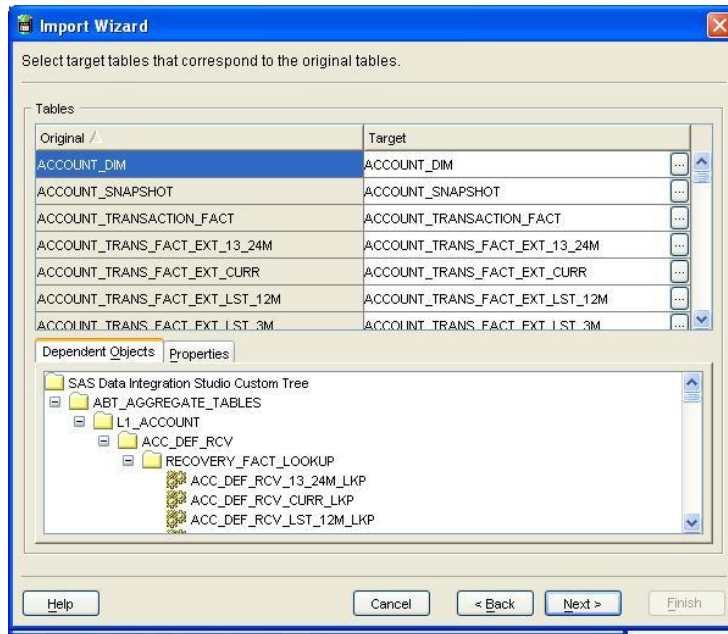


Figure 16. Import Wizard – Select Target Tables

10. A summary of the values specified is displayed in the window as shown below.

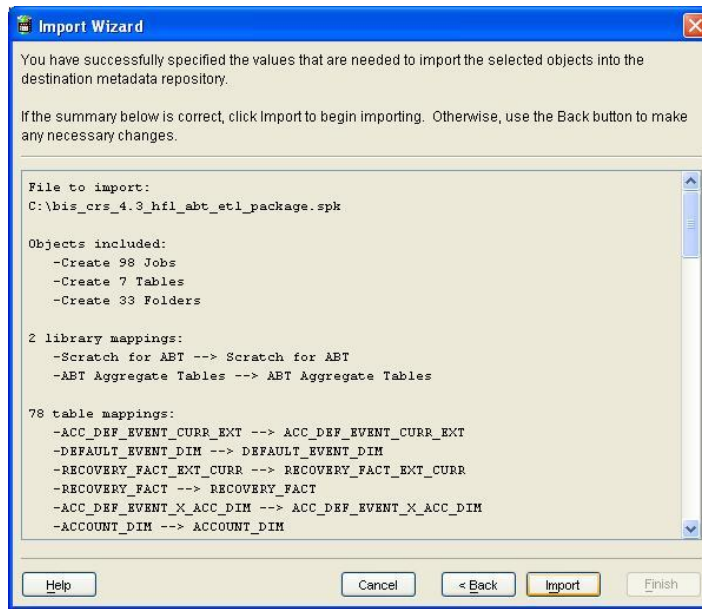


Figure 17. Import Wizard – Summary of Values Specified

11. To start the import process, click Import. A progress indicator is displayed in the window.

12. On successful completion of import, the Import Wizard window displays a completion.

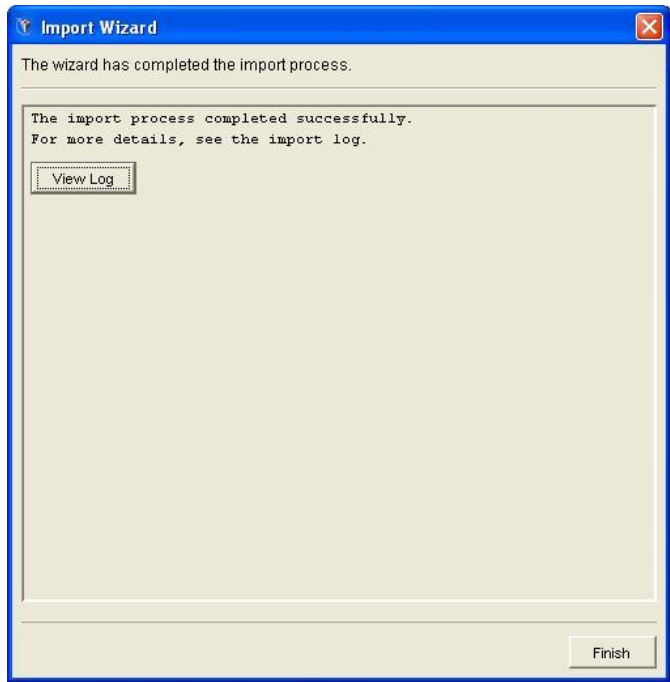


Figure 18. Import Wizard – Completion Message

13. Click Finish to close the window. All the objects will be imported into the DI Studio Environment.
14. In case an error appears, click View Log on the Import Wizard window, to view the error descriptions.

This completes the installation of SAS® Credit Scoring for Banking 4.3 Hot Fix 1.



Documentation Updates

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4.1 Updates

This chapter gives the changes required to be made in the following documents:

SAS® Credit Scoring for Banking 4.3: Overview

SAS® Credit Scoring for Banking 4.3: Data Management Guide

SAS® Credit Scoring for Banking 4.3: Analytical Usage Guide

4.1.1 The Credit Scoring Solution Process

Reference

SAS® Credit Scoring for Banking 4.3 Overview

Section 2.3: The Credit Scoring Solution Process, Point 6 and 11 on Page 6

Changes:

The name Credit Scoring data mart should be changed to Credit Scoring Additions Mart.

4.1.2 Data Management Concepts

Reference

SAS® Credit Scoring for Banking 4.3 Data Management Usage Guide

Section 4: Data Management Concepts

Changes:

The following two sections should be read before the Overview section in Chapter 4:

4.1.2.1 Prerequisites for Credit Scoring Specific ETL

The user has to manually enter every model that is to be loaded into the model monitoring mart in the following table, which is available in the folder “Data/bisdata/mdl mart”.

Table 10. Model Input

COLUMN_NAME	DESCRIPTION
MODEL_NM	Name of the Enterprise Model as registered with Metadata Server
SCR_CARD_EXP_TABLE_NM	Name of the table which contains the scorecard details of the model. The dataset emws1.sas7bdat has to be copied from the Enterprise Miner project workspace folder and renamed and placed in the folder “Data/bisdata/mdl mart”. The name of the dataset, emws1.sas7bdat, is the sample name. This dataset contains the significant variables used by the model.
SCR_CARD_ODDS_TABLE_NM	Name of the table which is created by applying the model code on the ABT. This dataset is created by the loading process and stored in the folder “Data/bisdata/mdl mart”
ABT_TABLE_NM	Name of the ABT dataset.
ABT_TABLE_PATH	Path in which the ABT table is available. Suggested path is Data/bisdata/abt.
ABT_TYPE	Type of ABT provided in the column ABT_TABLE_NM. Values are: MODEL for Modeling ABTs SCORE for Scoring ABTs. To change the value for ABT type, change the values for the following parameters: CS_ABT_TYPE_MDL CS_ABT_TYPE_SCR
STATUS	Status of the loading process. Values are: PENDING FINISH To change the value for the pending status, change the values for the following parameter: CS_MODEL_STATUS
SCR_CARD_RANGE_TABLE_NM	Name of the table which contains the Enterprise Miner bucketing information for the model. The dataset Emws1_pd_ranges.sas7bdat(sample dataset name) has to be copied from the Enterprise Miner project workspace folder and renamed and placed in the in the folder “Data/bisdata/mdl mart”
ABT_DT	Date for which the ABT has been built.

Development sample (ABT_TYPE=MODEL) will be considered for loading into the model monitoring mart. Whereas scoring model (ABT_TYPE=SCORE) will be considered for loading the model input mart.

4.1.2.2 ETL to Create Credit Scoring Specific Input Tables

Table 11. List of Jobs to Create Credit Scoring Specific Input Tables

Job	Process	Target
CS_BUILT_ABTCORING	<p>Model code is applied on the ABT which will be referred in the column ABT_TABLE_NM of MODEL_INPUT table and the location of the table is referred in the column ABT_TABLE_PATH. The output table is stored in the path “Data/bisdata/mdl mart”, with suffix “_out” to the ABT Table name, and the column SCR_CARD_ODDS_TABLE_NM in the MODEL_INPUT table is updated with the name.</p>	<p><ABT TABLE NAME>_OUT CAN BE MORE THAN ONE TABLE</p>
CS_MONITORING_MODEL	<ol style="list-style-type: none"> 1. The total count of models are obtained from MODEL_INPUT table where the STATUS is as given by the parameter CS_MODEL_STATUS and ABT_TYPE is as given by CS_MDL_TYPE, this parameter denotes that the type is monitoring model. 2. The table names are picked up from the MODEL_INPUT table for each model. 3. Check whether the dataset MODEL_INPUT contains all information for each model. If the table, mentioned in the column SCR_CARD_ODDS_TABLE_NM, is not provided, then information for that model is not included in the output dataset, and a message is written to the log. 4. If all information is provided and all dataset exist for a given model then, <ol style="list-style-type: none"> a) The dataset ACCOUNT_MODEL is created, containing the information provided in the dataset given by SCR_CARD_ODDS_TABLE_NM for each model by appending the data for PDO,LGD or CCF models provided. b) The dataset APPL_MODEL is created, containing the information provided in the dataset given by SCR_CARD_ODDS_TABLE_NM for each model by appending the data for PDA(Application PD) models provided. 	<p>ACCOUNT_MODEL APPL_MODEL</p>

Job	Process	Target
<p>CS_SCORING_IN PUT</p>	<ol style="list-style-type: none"> 1. The total count of models are obtained from MODEL_INPUT table where the STATUS is as given by the parameter CS_MODEL_STATUS and ABT_TYPE is as given by CS_ABT_TYPE_SCR or CS_ABT_TYPE_MODEL, this parameter denotes that the type is scoring or modeling. 2. The table names are picked up from the MODEL_INPUT table for each model. 3. Check whether the dataset MODEL_INPUT contains all information for each model. If for a model all the tables, that is SCR_CARD_EXP_TABLE_NM, SCR_CARD_ODDS_TABLE_NM and SCR_CARD_RANGE_TABLE_NM are not provided, or if the given datasets do not exist then information for that model is not included in the output dataset, and a message is written to the log. 4. Only the PDO model i.e. ongoing PD model is considered. 5. If all information is provided and all dataset exist for a given model then, <ol style="list-style-type: none"> a) If the ABT_TYPE is SCORE then <ol style="list-style-type: none"> 1) The dataset ACCOUNT_SCORE is created containing the information provided in the dataset given by SCR_CARD_ODDS_TABLE_NM for each model, by first transposing the given dataset (SCR_CARD_ODDS_TABLE_NM) and obtaining the group variable and then appending the data for all the models provided. 2) The dataset SCORE_CARD_RANGE is created, containing the information provided in the dataset given by SCR_CARD_RNG_TABLE_NM for each model, by first obtaining the FROM_SCORE and TO_SCORE from the _CUTOFF_SCORE_ as given in the dataset (SCR_CARD_RNG_TABLE_NM), and then appending the data for all the models provided. b) If the ABT_TYPE is MODEL then <ol style="list-style-type: none"> 1) The dataset VARIABLE_GROUPS_MODEL is created, containing the information provided in the dataset given by SCR_CARD_EXP_TABLE_NM for each model, by appending the data for all the models provided. 2) The dataset ACCOUNT_MODEL_SCORE is created containing the information provided in the dataset given by SCR_CARD_ODDS_TABLE_NM for each model, by first transposing the given dataset (SCR_CARD_ODDS_TABLE_NM) and obtaining the group variable and then appending the data for all the models provided. 	<p>ACCOUNT_SCORE, SCORE_CARD_RAN GE, VARIABLE_GROUPS _MODEL, ACCOUNT_MODEL_ SCORE</p>

4.1.3 Populating the Credit Scoring Data Mart

Reference

SAS® Credit Scoring for Banking 4.3 Data Management Usage Guide

Chapter 2: Section 2.4.1.1 Loading the First Bucket, Page 7

Changes:

A small change from “insert into work” to “insert into control” is required in the following code;

```
proc sql;
insert into control.LOAD_CONTROL (LOAD_MTH_YR_CD, LOAD_START_DTTM,
LOAD_END_DTTM, LOAD_FLG, RUN_STATUS)
values ('JAN2003', '01Jan2003:00:00:00'dt,
'31Jan2003:23:59:59'dt, &CHECK_FLAG_TRUE., &WAITING_STATUS.);
quit;
```

4.1.4 User Interface

Reference

SAS® Credit Scoring for Banking 4.3 Analytical Usage Guide

Chapter 2: Section 2.2 on Page 5 and Chapter 6: 6.1 on Page 94

Changes:

The following note is added at the start of the section.

Note: For all the user input screens, please avoid using the special characters and quotation marks.