



SAS® Credit Scoring for Banking 4.3

Hot Fix 2

SAS® Banking Intelligence Solutions

The Power to Know®

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SAS® Credit Scoring for Banking 4.3: Hot Fix 2

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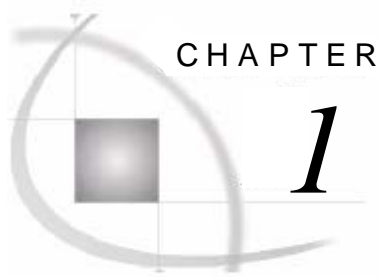
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Document Introduction

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1.1 Purpose

This document gives an overview of the errors that have been resolved in the SAS Credit Scoring for Banking 4.3 Hot Fix 2. It also explains the installation procedure of the hot fix and gives guidance on how to use it.

1.2 Audience

This document should be read by data warehouse architects, data modelers, system specialists, warehouse consultants, data integration specialists, who are installing and implementing SAS Credit Scoring for Banking 4.3. It should also be read by the Credit Scoring solution specialists in the service provider's project team. Moreover, IT analysts, warehouse administrators, system administrators, application developers, and database administrator in the client's team should also refer to this document.

1.3 Prerequisites

Users of this document should be familiar with SAS technology. Moreover, users should have administrative and programming experience with Base SAS software, SAS Data Integration Studio, and SAS Management Console and SAS Credit Scoring for Banking 4.3 solution.



Introduction to SAS Credit Scoring for Banking Hot Fix 2

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2.1 Prerequisite Software

The following SAS software should be installed before installing the SAS Credit Scoring for Banking 4.3 Hot Fix 2:

- ☐ SAS Credit Scoring for Banking 4.3
- ☐ SAS Credit Scoring for Banking 4.3 Hot Fix 1

2.2 Package Contents

The installable files of the SAS Credit Scoring for Banking Hot Fix 2 are packaged on a CD. The **installables** folder of the installation package contains files three folders

bis_crs_4.3_cc_hf2, **bis_crs_4.3_crs_hf2**, and **MIET**.

- ☐ Common components installable files (inside **bis_crs_4.3_cc_hf2** folder)
- ☐ Credit Scoring installable files (inside **bis_crs_4.3_crs_hf2** folder)
- ☐ Metadata Import Export Tool (MIET) files – Jar file and documentation (inside **MIET** folder)

Table 1. Installation Package

Filename	Description
Common Components Installable Files	
bis_crs_4.3_cc_hf2_installable_server_for_windows.zip	Use this file for installation on a Windows server. It contains server-side code.
bis_crs_4.3_cc_hf2_installable_server_for_unix.tar.gz	Use this file for installation on a UNIX server. It contains server-side code.
bis_crs_4.3_cc_hf2_installable_client.zip	Use this file for installation on both Windows and UNIX servers through SAS Data Integration Studio. It contains metadata for jobs and tables and custom groups.

Filename	Description
Credit Scoring Installable Files	
bis_crs_4.3_hf2_installable_server_for_windows.zip	Use this file for installation on a Windows server. It contains server-side code.
bis_crs_4.3_hf2_installable_server_for_unix.tar.gz	Use this file for installation on a UNIX server. It contains server-side code.
bis_crs_4.3_hf2_installable_client.zip	Use this file for installation on both Windows and UNIX Servers through SAS Data Integration Studio. It contains metadata for jobs and tables and custom groups.
MIET Files	
Metadata_Import_V1.6.jar	Jar file for MIET
User Manual_V1.6.doc	User Manual for MIET

2.3 Overview of SAS Credit Scoring for Banking 4.3 Hot Fix 2

Table 2. Errors Handled in Hot Fix 2

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
1.	Some strings are incorrectly internationalized.	<p>Changes are done in the crs_hf2_bismsg.smd and crs_hf2_bismsg_config.smd files. The details of these changes are mentioned in the crs_hf2_bismsg_chng.txt file, which is located in the Data/bisdata/internationalization folder.</p> <p>New files added:</p> <ul style="list-style-type: none"> Data/bisdata/internationalization/crs_hf2_bismsg.smd Data/bisdata/internationalization/crs_hf2_bismsg_config.smd Data/bisdata/internationalization/crs_hf2_bismsg_chng.txt 	Inputs from localization team
2.	After translating into other languages, the lengths of values that are specified for Category and Sub category fields on the user interface (Home tab of ABT Framework and left pane of Parameter Configuration screen) are longer than expected.	<p>In the relevant SAS code files, lrecl=500 is replaced with lrecl=700.</p> <p>Files affected:</p> <ul style="list-style-type: none"> Data/bisdata/storedprocs/analytics/explore_abt/expabt_create_tree.sas Data/bisdata/storedprocs/conf/create_tree.sas 	Inputs from localization team

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
3.	ABTs are created without labels for variable names.	<p>The ADDLABELSTOABT macro is used to create labels for the columns of ABTs.</p> <p>Files affected:</p> <ul style="list-style-type: none"> • <code>Data/bisdata/storedprocs/analytics/build_abt.sas</code> • <code>Data/bisdata/macro/analytics/build_score_abt.sas</code> <p>New files added: <code>Data/bisdata/macro/analytics/addlabelstoabt.sas</code></p>	er1001871
4.	<p>There is a mismatch between keys in 'var_master' table and the script build_abt.sas resulting in ABT creation error.</p> <p>Key variable numbers are incorrect in an INSERT statement, that is, they are numbered from 999996 to 999998.</p>	<p>The INSERT script in the code is modified as mentioned below.</p> <pre>INSERT into Work.Abt_X_Var A_No, V_No, Is_Selected_Flg) VALUES (&ABT_KEY, 999995, 'Y') VALUES (&ABT_KEY, 999996, 'Y') VALUES (&ABT_KEY, 999997, 'Y');</pre> <p>Files affected: <code>Data/bisdata/storedprocs/analytics/build_abt.sas</code></p>	Not applicable
5.	When a modeling ABT template is modified, another existing ABT template is overwritten. As a result, the ABT template that is overwritten needs to be recreated.	<p>The if B; statement is removed from the DATA step in the template_step5.sas file.</p> <pre>data &lib..abt_x_var; merge work.abt_x_var_srt(in=A) work.var_selection_srt(in=B; by a_no v_no; if B; run;</pre> <p>Files affected: <code>Data/bisdata/storedprocs/analytics/templates/template_step5.sas</code></p>	Inputs from implementation site

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
6.	Duplicate records are inserted into the Am_Ext data set when the Am_Ext_Abt_Fw job is run.	<p>The Load_Control data set is removed from the FROM clause in AM_EXT_ABT_FW.sas file. Also, the metadata that is required for the loop jobs that load the Analytical_Model_Dim data set is packaged.</p> <p>Files affected:</p> <p>SAS Data Integration Studio jobs and deployed jobs for the following:</p> <ul style="list-style-type: none"> • AM_EXT_ABT_FW • ControlABTModelJob • LoopABTModelJob <p>Custom folder SCHEDULE_AM_LOAD</p> <p>Data set PARAMETER_LIST_MODEL_JOBS</p>	Inputs from implementation site
7.	While creating an ABT template, users might see two or more variables with the same name. This is due to duplication of records in the Var_Master data set. Also, the jobs that are required for modeling ABT are not present in the Parameter_List_Model_Jobs data set.	<p>The script for correcting the errors is added.</p> <p>New Files added:</p> <p>Data/bisdata/code/frame_work_script/crs_hf2_abt_metadata.sas</p>	Not applicable
8.	The product filtering feature of ABT Framework does not function correctly.	<p>The following scripts are added in build_abt.sas (for modeling ABT) and build_scr_aggr_tables.sas (for scoring ABT).</p> <pre>VALUES (&ABT_KEY, 999998, 'Y') VALUES (&ABT_KEY, 999999, 'Y');</pre> <p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/storedprocs/analytics/build_abt.sas • Data/bisdata/macro/analytics/build_scr_aggr_tables.sas 	Inputs from implementation site

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
9.	Scoring ABT name has an extra underscore. Also, an extra ABT is created each time the scoring ABT is built.	<p>The code in the build_score_abt.sas file is corrected.</p> <p>The <code>%let new_abt_nm = &&abt_ds._&model_prod;</code> statement is changed as mentioned below:</p> <pre>%let new_abt_nm = %sysfunc(kcompress(&&abt_ds._&model_prod));</pre> <p>Files affected: Data/bisdata/macro/analytics/build_score_abt.sas</p>	Not applicable
10.	<p>Incorrect model details are fetched while building a scoring ABT.</p> <p>Due to a wrong IF-ELSE block, an incorrect scoring ABT name is passed to the %GET_MODEL_DETAILS macro.</p>	<p>The code in the build_score_abt.sas file is corrected.</p> <p>The <code>%if "&abt_level" eq "APPLICATION" %then %do;</code> statement is changed as mentioned below:</p> <pre>%else %if "&abt_level" eq "APPLICATION" %then %do;</pre> <p>Files affected: Data/bisdata/macro/analytics/build_score_abt.sas</p>	Not applicable
11.	<p>Target variable population (tgt_var) for application modeling ABT is incorrect.</p> <p>In the Ote_Appl_Good_Bad_Abt job, the Account dimension records are selected as of the end date of the outcome period. All the Account_snapshot records for these Account_Sk values are selected to set the outcome variable instead of selecting only the records that are available during the outcome period.</p>	<p>The Appl_Basic_Abt job is changed to set Outcome_Start_Dttm and Outcome_End_Dttm. The Ote_Appl_Good_Bad_Abt job is changed to select only the Account dimension and Account_Snapshot records within the outcome period to set the value of the outcome variable, Actual_Good_Bad_Flg.</p> <p>Files affected:</p> <ul style="list-style-type: none"> • SAS Data Integration Studio jobs and the deployed job for Appl_Basic_Abt and Ote_Appl_Good_Bad_Abt are modified. • The Appl_Basic_Abt data set is also changed. 	in1007538

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
12.	Current ETL does not separate the rejected applications from accepted ones. As a result, reject inference technique cannot be used in SAS Enterprise Miner.	<p>A new job Appl_Rej is added to create a data set that contains the rejected applications. The Ote_Appl_Good_Bad_Abt job is modified to append the rejected applications for creating the Aggregate table. The build_abt.sas and build_score_abt.sas files are changed to include the filters that are based on Appl_Outcm_Cd. This enables you to create two ABTs, one with all accepted applications and the other (name suffixed with ‘_rj’, that is <ABTname>_rj) with all rejected applications.</p> <p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/storedprocs/analytics/build_abt.sas • Data/bisdata/macro/analytics/build_score_abt.sas • SAS Data Integration Studio jobs and the deployed jobs for Appl_Rej and Ote_Appl_Good_Bad_Abt 	Not applicable
13.	The Minres.map file has insufficient lengths of columns. As a result, there is loss of data. Also, the MiningResult.map file is unavailable.	<p>The Minres.map xmlmap is modified to increase the length of ID, Model Nm, and Desc.</p> <p>Files affected: Data/bisdata/xmlmap/minres.map</p> <p>New files added: Data/bisdata/xmlmap/MiningResult.map</p>	Not applicable
14.	The message that is required for validating ABT variable name in the Add Variable screen of ABT Framework is not displayed.	<p>In the Data/bisdata/storedprocs/analytics/explore_abt/add_var.sas file, the abt.abt.msgspchrs.1 text is replaced with abt.msgspchrs.1 in the following line:</p> <pre>put "%sysfunc(sasmsg(smd_ds.bismsg,abt. abt.msgspchrs.1, noquote))"@;</pre> <p>Files affected: Data/bisdata/storedprocs/analytics/explore_abt/add_var.sas</p>	Not applicable
15.	The ote_acc_snap_lst_abt.sas outcome macro has a hardcoded value of 91 days.	<p>The hardcoded value is removed and the ACTUAL_DLQ_DAYS parameter is used instead.</p> <p>Files affected: Data/bisdata/macro/outcome_variables/account_snapshot/ote_acc_snap_lst_abt.sas</p>	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
16.	Modeling, Scoring, and Pooling ABTs are generated using an incorrect date value. The correct value is not passed to the LOAD_ABT_USER_INPUT_DATE parameter. As a result, the default value is used.	<p>An additional parameter, LOAD_ABT_USER_INPUT_DATE is added in the control jobs that are defined for modeling, scoring, and pooling. All the nine jobs are redeployed.</p> <p>Files affected:</p> <p>SAS Data Integration Studio jobs and the deployed job for the following jobs:</p> <ul style="list-style-type: none"> • ControlModelingABTJob • LoopModelingABTJob • MasterLoopModelingABTJob • ControlPoolingABTJob • LoopPoolingABTJob • MasterLoopPoolingABTJob • ControlScoringABTJob • LoopScoringABTJob • MasterLoopScoringABTJob.sas <ul style="list-style-type: none"> • Data/bisdata/storedprocs/analytics/build_abt.sas • Data/bisdata/macro/analytics/build_scr_aggr_tables.sas • Data/bisdata/macro/pooling/build_sel_abt.sas 	Inputs from implementation site
17.	There is inconsistency while setting the ABT date in stored process and the ABT ETL.	<p>The value of the LOAD_ABT_USER_INPUT_DTTM parameter is set to the first day of the month with timestamp as 00:00:00 in the following ETL jobs in which ABTs are built.</p> <p>ACC_DEF_EVENT_CURR_EXT.sas, ACC_DEF_EVENT_X_ACC_DIM.sas, and APPL_BASIC_AB.T.sas files are modified accordingly.</p> <p>Files affected:</p> <p>SAS Data Integration Studio and deployed jobs for the following:</p> <ul style="list-style-type: none"> • ACC_DEF_EVENT_CURR_EXT • ACC_DEF_EVENT_CURR_LKP • ACC_DEF_EVENT_X_ACC_DIM • APPL_BASIC_AB.T 	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
18.	The Application outcome variables (Appl_Out_Cd_12 and Appl_Out_Cd_06) are available for selection while creating a modeling ABT template.	<p>The level number for the ABT variables APPL_OUTCM_CD_12 and APPL_OUTCM_CD_06 is set to missing so that they are not available for selection (The APPL_OUTCM_CD variable is automatically forced into an APPLICATION level ABT). The following UPDATE script is used:</p> <pre>proc sql; update analytic.var_master set l_no = . where agg_var_nm = 'APPL_OUTCM_CD'; quit;</pre> <p>Files affected: Data/bisdata/macro/analytics/create_abt.sas</p> <p>New files added: Data/bisdata/code/frame_work_script/crs_hf2_abt_metadata.sas</p>	Not applicable
19.	When a scoring ABT template is modified, another existing scoring ABT template is overwritten. As a result, the existing scoring ABT template that is overwritten needs to be recreated.	<p>The if B; statement is removed from the DATA step in the scr_template_step4.sas file.</p> <pre>data &lib..scr_abt_x_var; merge work.scr_abt_x_var_srt(in=A) work.var_selection_srt(in=B); by a_no v_no; if B; run;</pre> <p>Files affected: Data/bisdata/storedprocs/analytics/scoring/scr_template_step4.sas</p>	Inputs from implementation site
20.	In the build_abt.sas and build_scr_aggr_tables.sas files, the macro variable, CHILD_JOBS is enclosed in double quotation marks. This eliminates the removal of the child jobs from the PARAMETER_LIST_MOD_ABt and PARAMETER_LIST_SCR_ABt data sets and some extra jobs are run.	<p>The double quotation marks around the 'child_jobs' macro variable are removed from the following lines of code.</p> <p>Original code:</p> <pre>delete from &work_lib..job_levels where job_nm in ("&child_jobs.");</pre> <p>Changed code:</p> <pre>delete from &work_lib..job_levels where job_nm in (&child_jobs.);</pre> <p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/storedprocs/analytics/build_abt.sas • Data/bisdata/macro/analytics/build_scr_aggr_tables.sas 	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
21.	While creating the final ABT, the ABT aggregate tables, which are joined to build the final ABT are not always indexed or sorted on the BY variables.	<p>For merging the ABT aggregate tables while creating the final ABT, the tables need to be sorted or indexed on the BY variables. This change is needed for both modeling and scoring ABT.</p> <p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/storedprocs/analytics/build_abt.sas • Data/bisdata/macro/analytics/build_scr_aggr_tables.sas 	Inputs from implementation site
22.	Only the champion model (where DEPLOYMENT_STATUS_CD='PRD') scores for customer level models are loaded in the Customer_Score_Detail data set. The challenger model (where DEPLOYMENT_STATUS_CD='PRD') scores are not loaded. Also, the value for Valid_Start_Dttm is derived using Load_Star_User_Input_Dttm instead of Load_End_Dttm in Customer_Score_Detail.	<p>In the Customer_Score_Pre_Detail job, the AM_EXT.MODEL_DEPLOYMENT_CD IN (&DEV_MODEL_DEPLOYMENT) condition is added to the WHERE clause. Also in the SCD2 transform, change tracking is modified to set Valid_Start_Dttm.</p> <p>Files affected:</p> <p>SAS Data Integration Studio job and deployed job for the following:</p> <ul style="list-style-type: none"> • CUSTOMER_SCORE_DETAIL • CUSTOMER_SCORE_PRE_DETAIL 	Not applicable.
23.	A few lines of code in the deployed jobs are truncated causing failure in job execution.	<p>Option lrecl is used in the control jobs to resolve this error.</p> <p>Files affected:</p> <p>SAS Data Integration Studio jobs and deployed jobs for the following:</p> <ul style="list-style-type: none"> • ControlABTModelJob • LoopABTModelJob • ControlModelingABTJob • LoopModelingABTJob • MasterLoopModelingABTJob • ControlPoolingABTJob • LoopPoolingABTJob • MasterLoopPoolingABTJob • ControlScoringABTJob • LoopScoringABTJob • MasterLoopScoringABTJob • ControlCreditScoringJob • LoopCreditScoringJob • MasterLoopCreditScoringJob • ControlStarSchemaJob • LoopStarSchemaJob • MasterLoopStarSchemaJob 	Inputs from implementation site

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
24.	Record validity dates for Credit_Bureau_Detail job are incorrectly populated. Valid_Start_Dttm is derived using Load_Star_User_Input_Dttm instead of Load_End_Dttm.	In SCD2 transform, change tracking is set to Valid_Start_Dttm. Files affected: SAS Data Integration Studio job and deployed job for Credit_Bureau_Detail	Not applicable
25.	'Bureau_info_rk' column is missing while calling the deduplicate macro in the Credit_Bureau_Pre_Detail job causing possible duplication of data in Credit_Bureau_Pre_Detail table.	Files affected: SAS Data Integration Studio job and deployed job for Credit_Bureau_Pre_Detail.	Not applicable
26.	The Application_Score_Pre_Detail job extracts the scores for behavior scoring models.	In the Application_Score_Pre_Detail job, the ACCT_SCORE_MODEL parameter is replaced with the APP_MODEL parameter in the WHERE clause condition. Files affected: SAS Data Integration Studio job and deployed job for Application_Score_Pre_Detail.	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
27.	The job metadata of some jobs (mentioned in the Files affected section of this table) might have missing tokens.	<p>All the deployed jobs for the jobs mentioned below are correct and hence are not repackaged. However, the SAS Data Integration Studio Job metadata for the jobs is repackaged.</p> <p>Files affected: Only SAS Data Integration Studio jobs metadata for the following:</p> <ul style="list-style-type: none"> • Acc_Snap_Ext_12m_Bck • Acc_Snap_Ext_13_24m • 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_3m • Acc_Snap_Ext_Lst_6m • Acc_Snap_Ext_Ltd • Acc_Snap_Ext_Priv • Ote_Acc_Snap_Ext_12m_Bck • Ote_Acc_Snap_Ext_1m_Bck • Ote_Acc_Snap_Ext_2m_Bck • Ote_Acc_Snap_Ext_3m_Bck • Ote_Acc_Snap_Ext_6m_Bck • Ccf_Prior_Avg_Bal_Amt • Vw_Acctsnpsht_Ccf • Acct_Snpsht_Time • Appl_Pd_Actual_Good_Bad • Vw_Vintage_Analysis • Otc_Ccf_Avg_Bal_Calc • Account_Snapshot_Ext 	Not applicable
28.	The External_Org_Rk column is set to not null in the jobs that are mentioned in the Files affected section of this table.	<p>The data set metadata and jobs are changed to make this column nullable.</p> <p>Files affected: The SAS Data Integration Studio jobs and deployed jobs and data set metadata for the following:</p> <ul style="list-style-type: none"> • Cus_Cc_L • Cus_Eo_L • Cus_Eoad_L • Cus_Ic_L • Cus_Fu_L • Customer_Pre_Dim 	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
29.	<p>For scoring and modeling ABT, the accounts, which are inactive, closed, or delinquent, as of date of ABT build are also included in the ABT. Also, in the same job that is, Acc_Def_Event_X_Acc_Dim job, the macro variables should be enclosed in single quotation marks in order to compare them against the parameters.</p>	<p>The filter condition to select only the active accounts based on the Account_Status_Cd column is added. An additional data set Acc_Def_Event_X_Acc_Dim_Tmp3 is created by joining the Acc_Def_Event_X_Acc_Dim_Tmp2 and Account_Snapshot data sets. This table contains only the accounts, which are not delinquent, inactive, or closed as of the ABT Date. The job code is also changed to enclose macro variables in single quotation marks.</p> <p>Files affected: SAS Data Integration Studio job and deployed job for Acc_Def_Event_X_Acc_Dim</p>	Not applicable
30.	<p>Index not added on Customer_Rk in the Cus_Cus_Basic_Curr_Abt job, causing job failure.</p>	<p>Job is modified to create the index.</p> <p>Files affected: SAS Data Integration Studio job and deployed code for Cus_Cus_Basic_Curr_Abt</p>	Not applicable
31.	<p>The challenger model scores for application and behavioral scoring are not loaded in the Credit Scoring mart; only the champion model scores are loaded.</p>	<p>The jobs mentioned below are changed to include the DEV_MODEL_DEPLOYMENT parameter in addition to the PRD_MODEL_DEPLOYMENT parameter in the WHERE clause.</p> <p>Files affected: SAS Data Integration Studio jobs and deployed jobs for the following:</p> <ul style="list-style-type: none"> • Account_Score_Pre_Detail • Am_Cas_Lgd • Cas_Am_Pd • Cas_Am_Ccf • Aps_Am • Aps_Am_Pd • Application_Score_Pre_Detail 	Inputs from implementation site

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
32.	<p>Solution doesn't support DDS on Oracle.</p> <p>Oracle date columns contain the date and time values. When _DT columns are used in any SAS program or ETL job in the WHERE clause, no data is extracted. Also, if the _DT columns are used in the SELECT clause, the date values are not displayed correctly.</p>	<p>The jobs are changed in order to include the date part function only if the DDS is in Oracle database.</p> <p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/storedprocs/analytics/pop_am/save_am.sas • Data/bisdata/macro/analytics/write_back_dds.sas <p>SAS Data Integration Studio jobs and deployed jobs for the following:</p> <ul style="list-style-type: none"> • AM_EXT • AM_EXT_ABT_FW • APS_EXT • APS_EXT_CSAM • BC_EXT • CAS_EXT • CAS_EXT_CSAM • CBA_EXT • CBAC_EXT • CBI_EXT • CC_EXT • CCO_EXT • CED_EXT • CMS_EXT • CON_EXT • CRA_EXT • CUS_EXT • DE_EXT • EO_EXT • EOFD_EXT • FA_EXT • FA_APP_EXT • FA_APP_APPT • FA_APP_FOR_DIM_EXT • FA_APPT_FOR_DIM_EXT • FAC_EXT • FAR_EXT • FIN_ACCT_RST_EXT • FP_EXT • FPA_EXT • IC_EXT • ICAD_EXT • LA_EXT • MA_EXT • OC_EXT • REC_EXT • REC_EXT 	fr1043164

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
33.	There is a space in the column name of the Reject_Cnt column. Also there is a space in the table name of the APPLICATION_ANALYSIS_FACT job.	<p>All the jobs that populate the Reject_Cnt column and use this column are changed.</p> <p>Files affected:</p> <p>SAS Data Integration Studio jobs and deployed jobs for the following:</p> <ul style="list-style-type: none"> • Fin_Act_App • Fin_App_Fu • Disbrs_Aprvd_Amt • Fin_App_Scr_Amt • Application_Analysis_Look_Up • App_Low_High_Side • APPLICATION_ANALYSIS_FACT <p>Data sets for the following:</p> <ul style="list-style-type: none"> • FIN_ACT_APP • FIN_APP_FU • DISBRS_APRVD_AMT • FIN_APP_SCR_AMT • APPLICATION_ANALYSIS_LOOK_UP 	Not Application
34.	The WHERE clause of the APPLICATION_PD_RK job contains incorrect joining criterion.	<p>The where condition is changed to ensure that all the application dimension records between the score time and target time are selected.</p> <p>Files affected:</p> <p>SAS Data Integration Studio jobs and deployed jobs for APPLICATION_PD_RK.</p>	Not applicable
35.	Default parameter values for ACCT_SCORE_MODEL and APP_MODEL are incorrect.	<p>The ACCT_SCORE_MODEL parameter is changed to include &PD_ONG_MODEL, &LGD_MODEL, and &CCF_MODEL.</p> <p>The APP_MODEL parameter is set as &PD_APP_MODEL</p> <p>New files added:</p> <p>Data/bisdata/code/parameter/crs_hf2_parameter_script.sas</p>	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
36.	The Employee_Rk column is set as not null.	<p>The data set metadata and jobs are changed to make this column nullable.</p> <p>Files affected: SAS Data Integration Studio jobs, deployed jobs, and data sets for the following:</p> <ul style="list-style-type: none"> • 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 	Not applicable
37.	<p>A number of columns in the following data sets are not nullable:</p> <p>Fa_App_Appt, Fp_Appnd_Prd_Type_L, Io_Ext jobs.</p>	<p>The jobs are changed to make the columns nullable.</p> <p>Files affected: SAS Data Integration Studio jobs, metadata data sets, and deployed jobs for the following:</p> <ul style="list-style-type: none"> • Fa_App_Appt • Fp_Appnd_Prd_Type_L • Io_Ext 	Not applicable
38.	The Internal_Org, Financial_Product, and Employee dimensions are not loaded if hierarchy data for them is not available.	<p>The Internal_Org, Financial_Product, and Employee dimensions need to be loaded irrespective of whether the data for hierarchy for these dimensions is available or not.</p> <p>The Io_All_Lvls, Ep_All_Lvls, and Fp_All_Lvls jobs are modified to correct this. If the hierarchy data is not available, blank data set structure is created.</p> <p>Files affected: SAS Data Integration Studio jobs and deployed jobs for the following:</p> <ul style="list-style-type: none"> • Io_All_Lvls • Ep_All_Lvls • Fp_All_Lvls 	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
39.	The score date for DDS write back is set as the date on which the scoring process is executed. Hence, the scores are loaded into the mart in the next run when data is loaded in the Foundation and Credit Scoring Mart causing a delay in model monitoring reports.	<p>The WRITE_BACK_DDS.sas macro is modified to set the score date in DDS to the previous month end date.</p> <p>Also, two additional jobs, Cas_Ext_Csam and Aps_Ext_Csam are created.</p> <p>These jobs are added in the PARAMETER_LIST_CREDIT_SCORING data set and the job dependency is updated.</p> <p>Files affected:</p> <p>Data/bisdata/macro/analytics/write_back_dds.sas</p> <p>New files added:</p> <ul style="list-style-type: none"> • SAS Data Integration Studio jobs and deployed jobs for Cas_Ext_Csam and Aps_Ext_Csam. • Data/bisdata/Code/Foundation_Job_Dependency/crs_hf2_credit_scoring_mart.sas 	Not applicable
40.	The SCORE_POINTS column in the APPL_PD_FACT table is not populated.	<p>The condition if MODEL_TYPE_CD = &PD_ONG_MODEL. then is changed to if MODEL_TYPE_CD = &PD_APP_MODEL. then</p> <pre>do; ESTIMATED_PD=ESTIMATED_RT; ESTIMATED_SCORE=SCORE_POINTS_NO; end;</pre> <p>Files affected:</p> <p>SAS Data Integration Studio jobs and deployed jobs for AM_POOL_SCHEME_APS_TRANSPOSED.</p>	Not applicable
41.	<p>Pools based on PD, LGD and CCF combinations are not correctly populated.</p> <p>The values of ESTIMATED_PD, ESTIMATED_LGD and ESTIMATED_CCF are not set correctly in the AM_POOL_SCHEME_CAS_TRANSPOSED job.</p>	<p>To support Pool scheme based on PD, LGD, or CCF models and the combinations of them, multiple columns need to be set as per the combination. The column values were set only one at a time instead of multiple columns.</p> <p>(For example, PD-LGD based pool scheme will require the values of both ESTIMATED_PD and ESTIMATED_LGD values to be set correctly.)</p> <p>Files affected:</p> <p>SAS Data Integration Studio jobs and deployed jobs for AM_POOL_SCHEME_CAS_TRANSPOSED.</p>	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
42.	<p>The Fact.Score_Range_Fact data set is incorrectly populated. Variable groups with the highest scores are removed from the fact and there is no score range bucket to capture missing scores if any.</p> <p>Records having 'neutral score' category are present in score_card_dim.</p>	<p>Additional score ranges, Missing (.) to 0 and Highest ranges to the MAX_VALUE parameter are added.</p> <p>The Cs_Scoring_Input job is changed:</p> <p>two rows, (From_score . And To_score 0, From_score maximum score and To_score = &MAX_VALUE (99999999) are added.</p> <p>Files affected:</p> <p>SAS Data Integration Studio job and deployed job for Cs_Scoring_Input</p>	dk1019316 and dk1019468
43.	<p>There is extra code in the Cs_Scoring_Input job, which recreates the account_score and score_card_range data sets. Similar code is present in the Cs_Monitoring_Model job for appl_model and account_model data sets.</p>	<p>Files affected:</p> <p>SAS Data Integration Studio job and deployed job for the following:</p> <ul style="list-style-type: none"> • Cs_Scoring_Input • Cs_Monitoring_Model. 	dk1019159

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
44.	The Variable_Group_Label column in the Score_Card_Dim data set is truncated because of the column length.	<p>The column lengths for Variable_Group_Label and Variable_name are increased from 40 to 100.</p> <p>Files affected:</p> <p>SAS Data Integration Studio Jobs and deployed jobs for the following:</p> <ul style="list-style-type: none"> • Cs_Scoring_Input • Variable_Ext • Score_Card_Variable_Dim • Fpa_Acct_Scr • Mod_Var_Grp • Mod_Var_Grp_Scr • Score_Card_Dim • Acct_Mod_Var_Scr • Mod_Var_Scr • Acct_Scr_Range • Score_Range_Pre_Fact • Score_Card_Pre_Fact <p>Data sets</p> <ul style="list-style-type: none"> • Account_Model_Score • Account_Score • Variable_Groups_Model • Variable_Ext • Acct_Scr_Range • Score_Card_Variable_Dim • Fpa_Acct_Scr • Fpa_Acct_Scr_Exp • Mod_Var_Grp • Mod_Var_Grp_Exp • Mod_Var_Grp_Scr • Score_Card_Dim • Acct_Mod_Var_Scr • Acct_Mod_Var_Scr_Exp • Score_Range_Pre_Fact_Exp • Score_Card_Pre_Fact_Exp 	Inputs from implementation site

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
45.	The count of defaults in development sample is calculated on predictions rather than on actual performance.	<p>The development sample default count should be based on the actual performance observed, that is, TGT_VAR.</p> <p>The data set metadata for Account_Model_Score is changed to add Tgt_Var. The Acct_Mod_Var_Scr job is changed for propagating this additional variable. The Mod_Var_Scr job is changed to use Tgt_Var instead of Cut_Off_Score. The Acct_Scr_Range job is changed to use Tgt_Var instead of Cut_Off_Score. Also, it is changed to include all the rows from Score_Card_Range to display all possible Score Range/ Variable Groupings for the model.</p> <p>Files affected:</p> <p>SAS Data Integration Studio jobs and deployed jobs for:</p> <ul style="list-style-type: none"> • CS_SCORING_INPUT • Acct_Mod_Var_Scr • Mod_Var_Scr • Acct_Scr_Range <p>Data set metadata for:</p> <ul style="list-style-type: none"> • Account_Model_Score • Acct_Mod_Var_Scr • Acct_Mod_Var_Scr_Exp 	dk1019280
46.	The Score_Card_Variable_Fact table does not get data for Application scoring models.	<p>Two new jobs, Score_Card_Variable_Fact_Pda_Devn and Score_Card_Variable_Fact_Pda_Devy are added in order to cater to application PD models. Also, the job dependency for these jobs is added in the Parameter_List_Credit_Scoring table.</p> <p>Files affected:</p> <p>Data/bisdata/code/foundation_job_dependency/crs_hf2_credit_scoring_mart.sas</p> <p>SAS Data Integration Studio job and deployed job for the following:</p> <ul style="list-style-type: none"> • Score_Card_Variable_Fact_Pda_Devn • Score_Card_Variable_Fact_Pda_Devy 	dk1019316
47.	The format for the Target_Time_Sk column in the Trg_Scr_Time_Act_Key job is incorrect.	<p>Files affected:</p> <ul style="list-style-type: none"> • SAS Data Integration Studio job and deployed job for Trg_Scr_Time_Act_Key • The data set metadata for Trg_Scr_Time_Act_Key 	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
48.	The status for modeling sample in the Model_Input data set is not updated to Finished after successful completion.	The following jobs are changed to include the update in the post process. Files affected: SAS Data Integration Studio job and deployed job for MasterLoopCreditScoringJob	Inputs from implementation site
49.	%SYSFUNC() is used twice in the definition of macro variables &INFO, &KL, &KS, &ROC, and &AR.	Files affected: Data/bisdata/macro/computations/pd/distance_stats.sas	dk1019069
50.	Format is applied twice for the statistics, INFO, KL, KS, ROC, and AR causing statistics to be reported 100 times less than their actual (correct) values.	Files affected: Data/bisdata/macro/computations/pd/distance_stats.sas	dk1019070
51.	There is a possibility that maximum value of Kolmogorov-Smirnov can occur for two different score points. The code which is splitting based on &KSDIST is unnecessary.	In such case of maximum value of Kolmogorov-Smirnov occurring for two different scores, the minimum score is considered. Files affected: Data/bisdata/storedprocs/pd/ks.sas	dk1019071
52.	Coding error in LOAD_PD_MODEL_MEASURE_FACT.sas. The &MEASURE_CD_LST_RSLV macro variable is not set before it is used.	Files affected: <ul style="list-style-type: none"> • Data/bisdata/macro/factupdates/load_pd_model_measure_fact.sas • Data/bisdata/macro/factupdates/load_applpd_model_measure_fact.sas • Data/bisdata/macro/factupdates/load_ccf_model_measure_fact.sas • Data/bisdata/macro/factupdates/load_lgd_model_measure_fact.sas 	dk1019167

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
53.	<p>Coding errors in the LOAD_SCORE_CARD_VARIABLE_FACT.sas macro.</p> <p>Closing parenthesis is missing for the following statements:</p> <pre>AND kupcase (MODEL_INPUT. status) IN (%sysfunc(kupcase(&C S_MODEL_STATUS))</pre> <pre>AND kupcase (MODEL_INPUT. ABT_TYPE) IN (%sysfunc(kupcase(&C S_ABT_TYPE_MDL))</pre> <p>The TARGET_PRD macro variable is not defined for the dev_flag=Y condition. However, for the dev_flag=N condition, the same variable is set correctly.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/factupdates/load_score_card_variable_fact.sas</p>	dk1019160
54.	<p>Coding error in LOAD_SCORE_CARD_VARIABLE_FACT.sas and LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macros. The format of the TIME_DATE macro variable is not defined correctly.</p>	<p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/macro/factupdates/load_score_card_variable_fact.sas • Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas 	dk1019163
55.	<p>Coding error in the FEED_PD_APPL_POOL.sas macro. Instead of %KUPCASE, the program code contains K%UPCASE.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/feedmacros/feed_pd_appl_pool.sas</p>	dk1019164

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
56.	<p>Coding errors in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro.</p> <p>Input parameter to the macro is MODEL_TYPE_VAL. However, in the code, it is referred as MODEL_TYPE.</p> <p>In the %GENERATE_FEED_MIP call, the FEED_FOR parameter is always set as &FEED_FOR_APPLPD</p> <p>In the %GENERATE_FEED_MIP call, the PRODUCT_TYPE_CODE parameter is not used.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</p>	dk1019176
57.	The Bayesian Error Rate statistic is not computed.	<p>Files affected:</p> <p>Data/bisdata/macro/computations/pd/roc_stat.sas</p>	dk1019172
58.	Coding error in shift_index.sas. The existence of macro variables, which are not used further in the code, is checked.	<p>Files affected:</p> <p>Data/bisdata/storedprocs/modelinputs/shift_index.sas</p>	dk1019175
59.	Coding error in the roc.sas stored procedure. Two data sets are merged without the use of a BY clause.	<p>Files affected:</p> <p>Data/bisdata/storedprocs/pd/roc.sas</p>	dk1019173
60.	Calculation of the D statistic does not conform to the explanation that is provided in the documentation.	<p>Files affected:</p> <p><i>SAS Credit Scoring for Banking 4.3 Analytical Usage Guide</i></p>	dk1019174
61.	Values of True Positives, True Negatives, False Positives, and False Negatives are not calculated correctly.	<p>Files affected:</p> <p>Data/bisdata/macro/computations/pd/conf_matrix.sas</p>	dk1019198

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
62.	<p>The result from the ROC_STAT macro is written to the Fact.Model_Measure_Fact data set. The result from the BRIER macro is discarded. The BRIER macro, however, is used when the appropriate Model Monitoring reports are called for the latest period. As a result, on the Select Statistic page, one measure can be seen for the Brier score. However, if this measure is selected, a different value of the Brier score is seen on the Miscellaneous Statistic page.</p> <p>AR, KS, and ROC are calculated twice.</p> <p>The Brier score that is calculated using the ROC_STAT.sas macros is incorrect.</p>	<p>Files affected:</p> <ul style="list-style-type: none"> • <code>Data/bisdata/macro/computations/pd/distance_stats.sas</code> • <code>Data/bisdata/macro/computations/pd/roc_stat.sas</code> 	dk1019203
63.	<p>Coding error in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro. Input to the macro %CHECK_ALLDEFAULTS_NODEFAULTS is incorrect.</p>	<p>Files affected:</p> <p><code>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</code></p>	dk1019219
64.	<p>Coding error in the LOAD_SCORE_CARD_VARIABLE_FACT.sas macro. The MODEL_CD macro variable is not defined in the SQL.</p>	<p>Files affected:</p> <p><code>Data/bisdata/macro/factupdates/load_score_card_variable_fact.sas</code></p>	dk1019218
65.	<p>Coding error in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro.</p> <p>There is an infinite loop in the program.</p> <p>The macro variables, i and end_time that are used in the program are not defined.</p>	<p>Files affected:</p> <p><code>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</code></p>	dk1019220

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
66.	<p>Calculation of var_exp_bads is wrong.</p> <p>Calculation of Chi_sq is not correct.</p> <p>The stored procedure that generates the Miscellaneous Statistic page displays the P-value twice instead of one statistic value and one p-value.</p>	<p>Files affected:</p> <ul style="list-style-type: none"> • <code>Data/bisdata/macro/computations/pd/hl_pd.sas</code> • <code>Data/bisdata/storedprocs/pd/misc_report.sas</code> 	dk1019213
67.	<p>Coding error in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro. All characteristics of a model are not loaded into Score_Card_Variable_Fact. Only the first characteristic is loaded, others are ignored.</p>	<p>Files affected:</p> <p><code>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</code></p>	dk1019224
68.	<p>Coding error in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro.</p> <p>Instead of loading Score_Card_Variable_Fact table, this macro inserts rows in the Model_Measure_Fact table.</p>	<p>Files affected:</p> <p><code>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</code></p>	dk1019230
69.	<p>For calculation of KS, Sorting is done based on seq_no.</p>	<p>It has been changed now to sort based on proportion of bads in the development sample.</p> <p>Files affected:</p> <p><code>Data/bisdata/macro/computations/pd/ks_stat.sas</code></p>	dk1019335
70.	<p>Event shift index value is not displayed correctly on the report.</p>	<p>Files affected:</p> <ul style="list-style-type: none"> • <code>Data/bisdata/internationalization/bismsg_config.smd</code> • <code>Data/bisdata/storedprocs/modelinputs/shift_index.sas</code> 	dk1019334
71.	<p>Model attribute and model attribute event reports not working.</p>	<p>Files affected:</p> <ul style="list-style-type: none"> • <code>Data/bisdata/storedprocs/modelinputs/model_attrib.sas</code> • <code>Data/bisdata/storedprocs/modelinputs/model_attrib_event.sas</code> 	dk1019346

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
72.	<p>Coding error in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro.</p> <p>The program has an infinite loop is defined in it.</p> <p>Rows are not inserted in the Score_Card_Variable_Fact table.</p> <p>More than one row is updated in the Score_Card_Variable_Fact fact, while computations are done for a single month.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</p>	dk1019231
73.	<p>Coding error in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro.</p> <p>The call to the CHECK_ALLDEFAULTS_N ODEFAULTS.sas macro is incorrect.</p> <p>The 'No_Of_Events_Actual' column should be used instead of 'No_Of_Actual_Bads'.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</p>	dk1019281
74.	<p>Coding errors in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro.</p> <p>A semicolon is incorrectly inserted in the SQL statement.</p> <p>The quit statement is missing.</p> <p>There are extra semicolons.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</p>	dk1019288
75.	<p>Coding error in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro. An infinite loop exists in the code.</p>	<p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas • Data/bisdata/macro/computations/modelinputs/get_chi_square_table.sas 	dk1019289

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
76.	<p>Coding errors in the LOAD_PD_SCORE_CARD_VARIABLE_FACT.sas macro.</p> <p>The code for the TGT_TIME macro variable initialization is redundant.</p> <p>The value for the TGT_TIME variable is not set correctly.</p> <p>The variables, SCORE_TIME_SK and TARGET_TIME_SK are not updated correctly.</p> <p>The fact table, Fact.Score_Card_variable_Fact is not updated correctly. It should be ensured that the update is at the correct time, for the correct model, for the correct measure, for the correct variable, and finally for the condition dev_flg=N.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas</p>	dk1019290
77.	Formulae for Event Stability Index and Variable Stability Index are incorrect in Analytical Usage Guide.	<p>Files affected:</p> <p><i>SAS Credit Scoring for Banking 4.3 Analytical Usage Guide.</i></p>	dk1019309
78.	<p>The model_attrb.sas uses the bismsg key, which is currently containing % sign into the text. This can cause problems during the localization process.</p> <p>Also, special symbols (such as ‘,’ etc) that are present as SAS Enterprise Miner attributes are not handled appropriately in the model_attrb_event.sas file.</p>	<p>The changes are made to handle these issues.</p> <p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/storedprocs/modelinputs/model_attrb.sas • Data/bisdata/storedprocs/modelinputs/model_attrb_event.sas • Data/bisdata/internationalization/crs_hf2_bismsg.smd 	Inputs from implementation site
79.	The fact score_card_variable_fact, on which the model input reports are based, and the fact model_measure_fact are not populated for each month. This data is required for comparison between development and actual sample.	<p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/macro/factupdates/load_pd_score_card_variable_fact.sas • Data/bisdata/macro/factupdates/load_model_measure_fact.sas 	Inputs from implementation site

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
80.	The statistics for previous months are not updated correctly.	Files affected: <ul style="list-style-type: none"> • Data/bisdata/macro/factupdatations/load_pd_model_measure_fact.sas • Data/bisdata/macro/factupdatations/load_aplplpd_model_measure_fact.sas • Data/bisdata/macro/factupdatations/load_ccf_model_measure_fact.sas • Data/bisdata/macro/factupdatations/load_lgd_model_measure_fact.sas 	Inputs from implementation site
81.	The model input reports 'Attribute Proportion by Score' and 'Attribute Event Rate by Score' are not generated and functioning correctly.	Files affected: <ul style="list-style-type: none"> • Data/bisdata/macro/display/draw_table.sas • Data/bisdata/storedprocs/modelinputs/model_attrib_event.sas • Data/bisdata/storedprocs/modelinputs/model_attrib.sas 	dk1019475
82.	The system stability index is not calculated if there are all defaults or no defaults in actual sample.	Files affected: <ul style="list-style-type: none"> • Data/bisdata/macro/factupdatations/load_pd_model_measure_fact.sas • Data/bisdata/macro/factupdatations/load_aplplpd_model_measure_factsas • Data/bisdata/macro/factupdatations/load_ccf_model_measure_fact.sas • Data/bisdata/macro/factupdatations/load_lgd_model_measure_fact.sas 	Inputs from implementation site
83.	The Bayesian Error Rate formula is incorrect as it is based on pool level PD, rather than portfolio level PD.	Files affected: Data/bisdata/macro/computations/pd/roc_stat.sas	Inputs from implementation site
84.	The macro variable measure_cd is not initialized correctly.	Files affected: <ul style="list-style-type: none"> • Data/bisdata/macro/factupdatations/load_pd_model_measure_fact.sas • Data/bisdata/macro/factupdatations/load_aplplpd_model_measure_fact.sas • Data/bisdata/macro/factupdatations/load_ccf_model_measure_fact.sas • Data/bisdata/macro/factupdatations/load_lgd_model_measure_fact.sas 	Inputs from implementation site

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
85.	<p>The macro variable ACTUAL_DLQ_CNT is used instead of the variable ACTUAL_DLQ_DAYS in the build_pool_abt.sas stored process.</p> <p>Ordering cannot be done while creating the work.temp_actual_def file.</p> <p>Ordering is wrongly done while creating the work.temp_actual_def1 table.</p> <p>Coding error in the following:</p> <pre>data table &out_lib..temp_actua l_ def1;</pre> <p>The word 'table' is typo mistake.</p>	<p>Files affected:</p> <p>Data/bisdata/storedprocs/pooling/build_pool_abt.sas</p>	Inputs from implementation site.
86.	<p>The nldate10. format is used instead of the date9. format in the following line of code:</p> <pre>name=put(date(), NLDATE10.) "_" stri p(tranwrd(put(time(), time6.), ":" ,"_"));</pre> <p>The correct date conversion statements for ld_dt and ld_dttm are missing.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/pooling/build_se1_abt.sas</p>	Inputs from implementation site.
87.	<p>A wrong table is updated, that is, the Control.Parameter_List_Scr_Abt table is updated instead of the Control.Parameter_List_Pool_Abt table.</p>	<p>Files affected:</p> <p>SAS Data Integration Studio job and deployed job code for MasterLoopPoolingABTJob.sas</p>	Not applicable

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
88.	<p>An extra file, pool_stability_index1.sas is packaged.</p> <p>Pool stability index is calculated incorrectly.</p> <pre>data temp; set &input_pool_ds (keep = NO_OF_ACCOUNTS ASSIGNED_PD POOL_SEQ_NO);</pre> <p>need to keep column pool_name also in the above code.</p>	<p>Files affected:</p> <p>Data/bisdata/macro/computations/common/pool_stability_index.sas</p>	Inputs from implementation site.
89.	<p>While calculating KS for a pool, the number of defaults is passed as a missing value. The number of defaults should be calculated by using the following formula:</p> <p>PD of pool * No. of accounts in the pool.</p>	<p>Files affected:</p> <p>Data/bisdata/storedprocs/pooling/build_scheme_pd_pool.sas</p>	Inputs from implementation site.
90.	The BY statement is missing for a DATA step merge.	<p>Files affected:</p> <p>Data/bisdata/macro/computations/pd/cs_rep_data_prep.sas</p>	Inputs from implementation site.
91.	The Deploy Scheme button that is available on the Pooling screen does not function correctly	<p>Files affected:</p> <p>Data/bisdata/storedprocs/pooling/deploy_pool_scheme.sas</p>	Inputs from implementation site.
92.	There is a discrepancy in the calculation and the formula that is mentioned in the online Help for event stability, variable stability, and D statistics.	<p>Files affected:</p> <ul style="list-style-type: none"> • evnt_stb.gif • validation_score_1.gif • var_stb.gif 	Not applicable
93.	In the Attribute Event Rate and Attribute Cumulative Event Rate by Score reports, an attribute is dropped if there are no records for it in the development or actual sample.	<p>Files affected:</p> <ul style="list-style-type: none"> • SAS Data Integration Studio job ACCT_SCR_RANGE • macro/feedmacrosmip/feed_pd_pool_mip.sas 	dk1019507
94.	Missing values for <i>total number of bads</i> causes errors.	<p>Files affected:</p> <ul style="list-style-type: none"> • Data/bisdata/macro/computations/common/check_alldefaults_nodefau • lts.sas 	Inputs from implementation site.

No.	Error description	Solution / Files affected or changed	Error number in Sirius track
95.	Model input reports for Application Scoring are not functioning.	<p>Files affected:</p> <p>Data/bisdata/macro/feedmacrosmip/feed_pd_appl_pool_mip.sas</p> <p>SAS Data Integration Studio job and deployed job code for</p> <ul style="list-style-type: none"> • CS_SCORING_INPUT • SCORE_CARD_VARIABLE_FACT_PDA_DEVN • SCORE_CARD_VARIABLE_FACT_PDA_DEVY 	Not applicable



CHAPTER

3

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3.1 Overview of the Hot Fix Installation

The installation procedure of the SAS Credit Scoring for Banking 4.3 Hot Fix 2 is categorized into two parts:

- ☐ installing common components (Foundation mart ETL, ABT ETL, and ABT Framework macros and stored processes)
- ☐ installing credit scoring components (Credit Scoring additions mart ETL and macros and stored processes that are required for model monitoring and pooling)

3.2 Create a Backup

Perform the following steps before you install the SAS Credit Scoring for Banking 4.3 Hot Fix 2:

1. Shut down the Metadata server.

2. Create a backup of the following:
 - a. **Data/bisdata** folder
 - b. Metadata server: Foundation repository that is located in the **<SAS Configuration path>/<Level>/SASMain/MetadataServer/MetadataRepositories** folder.

This will enable you to rollback the hot fix installation, if you encounter any problems during the installation.

3. Restart the Metadata server and object spawner.

3.3 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 SAS Credit Scoring for Banking 4.3 Hot Fix 2 installation.

Table 3. Code Files

Path under server context SasMain folder	Affected filename	Changes done
Data/bisdata/code/frame_work_script	crs_hf2_abt_metadata.sas	Add
Data/bisdata/code/parameter	crs_hf2_parameter_script.sas	Add
Data/bisdata/code/foundation_job_dependency	crs_hf2_credit_scoring_mart.sas	Add
Data/bisdata/code/foundation_script/dimension	crs_hf2_measure_dim.sas	Add
Data/bisdata/code/foundation_script/dimension	crs_hf2_score_cv_dim.sas	Add
Data/bisdata/internationalization	crs_hf2_bismsg.smd	Add
Data/bisdata/internationalization	crs_hf2_bismsg_config.smd	Add
Data/bisdata/internationalization	crs_hf2_bismsg_chng.txt	Add

Table 4. Deployed Code Files for ETL Jobs

Path under server context SasMain folder	Affected filename	Changes done
Data/bisdata/jobs	AM_EXT_ABT_FW.sas	Replace
Data/bisdata/jobs	ControlABTModelJob.sas	Replace
Data/bisdata/jobs	LoopABTModelJob.sas	Replace
Data/bisdata/jobs	APPL_BASIC_ABT.sas	Replace
Data/bisdata/jobs	OTE_APPL_GOOD_BAD_ABT.sas	Replace
Data/bisdata/jobs	APPL_REJ.sas	Add
Data/bisdata/jobs	SCORE_CARD_DIM.sas	Replace
Data/bisdata/jobs	AM_POOLSCHEME_CAS_TRANSPOSED.sas	Replace
Data/bisdata/jobs	AM_POOL_SCHEME_APS_TRANSPOSED.sas	Replace
Data/bisdata/jobs	ControlModelingABTJob.sas	Replace
Data/bisdata/jobs	LoopModelingABTJob.sas	Replace
Data/bisdata/jobs	MasterLoopModelingABTJob.sas	Replace
Data/bisdata/jobs	ControlPoolingABTJob.sas	Replace

Path under server context SasMain folder	Affected filename	Changes done
Data/bisdata/jobs	LoopPoolingABTJob.sas	Replace
Data/bisdata/jobs	MasterLoopPoolingABTJob.sas	Replace
Data/bisdata/jobs	ControlScoringABTJob.sas	Replace
Data/bisdata/jobs	LoopScoringABTJob.sas	Replace
Data/bisdata/jobs	MasterLoopScoringABTJob.sas	Replace
Data/bisdata/jobs	ACC_DEF_EVENT_CURR_EXT.sas	Replace
Data/bisdata/jobs	ACC_DEF_EVENT_CURR_LKP.sas	Replace
Data/bisdata/jobs	ACC_DEF_EVENT_X_ACC_DIM.sas	Replace
Data/bisdata/jobs	CUSTOMER_SCORE_PRE_DETAIL.sas	Replace
Data/bisdata/jobs	CUSTOMER_SCORE_DETAIL.sas	Replace
Data/bisdata/jobs	ControlCreditScoringJob.sas	Replace
Data/bisdata/jobs	LoopCreditScoringJob.sas	Replace
Data/bisdata/jobs	MasterLoopCreditScoringJob.sas	Replace
Data/bisdata/jobs	ControlStarSchemaJob.sas	Replace
Data/bisdata/jobs	LoopStarSchemaJob.sas	Replace
Data/bisdata/jobs	MasterLoopStarSchemaJob.sas	Replace
Data/bisdata/jobs	CREDIT_BUREAU_DETAIL.sas	Replace
Data/bisdata/jobs	CREDIT_BUREAU_PRE_DETAIL.sas	Replace
Data/bisdata/jobs	APPLICATION_SCORE_PRE_DETAIL.sas	Replace
Data/bisdata/jobs	CUS_CC_L.sas	Replace
Data/bisdata/jobs	CUS_EO_L.sas	Replace
Data/bisdata/jobs	CUS_EOAD_L.sas	Replace
Data/bisdata/jobs	CUS_IC_L.sas	Replace
Data/bisdata/jobs	CUS_FU_L.sas	Replace
Data/bisdata/jobs	CUSTOMER_PRE_DIM.sas	Replace
Data/bisdata/jobs	CUS_CUS_BASIC_CURR_ABT.sas	Replace
Data/bisdata/jobs	ACCOUNT_SCORE_PRE_DETAIL.sas	Replace
Data/bisdata/jobs	AM_CAS_LGD.sas	Replace
Data/bisdata/jobs	CAS_AM_PD.sas	Replace
Data/bisdata/jobs	CAS_AM_CCF.sas	Replace
Data/bisdata/jobs	APS_AM.sas	Replace
Data/bisdata/jobs	APS_AM_PD.sas	Replace
Data/bisdata/jobs	APS_EXT.sas	Replace
Data/bisdata/jobs	BC_EXT.sas	Replace
Data/bisdata/jobs	CAS_EXT.sas	Replace
Data/bisdata/jobs	CED_EXT.sas	Replace
Data/bisdata/jobs	CMS_EXT.sas	Replace

Path under server context SasMain folder	Affected filename	Changes done
Data/bisdata/jobs	CON_EXT.sas	Replace
Data/bisdata/jobs	FA_APP_EXT.sas	Replace
Data/bisdata/jobs	FIN_ACCT_RST_EXT.sas	Replace
Data/bisdata/jobs	FPA_EXT.sas	Replace
Data/bisdata/jobs	OC_EXT.sas	Replace
Data/bisdata/jobs	FIN_ACT_APP.sas	Replace
Data/bisdata/jobs	FIN_APP_FU.sas	Replace
Data/bisdata/jobs	DISBRS_APRVD_AMT.sas	Replace
Data/bisdata/jobs	FIN_APP_SCR_AMT.sas	Replace
Data/bisdata/jobs	APPLICATION_ANALYSIS_LOOK_UP.sas	Replace
Data/bisdata/jobs	APP_LOW_HIGH_SIDE.sas	Replace
Data/bisdata/jobs	FA_UP_SELL_L.sas	Replace
Data/bisdata/jobs	FA_FARST_L.sas	Replace
Data/bisdata/jobs	FA_CBAC_L.sas	Replace
Data/bisdata/jobs	FA_CBA_L.sas	Replace
Data/bisdata/jobs	FA_MAC_L.sas	Replace
Data/bisdata/jobs	FA_CUSXFA_FPA_FP_L.sas	Replace
Data/bisdata/jobs	FA_MCMP_L.sas	Replace
Data/bisdata/jobs	FA_CCAC_L.sas	Replace
Data/bisdata/jobs	FA_TRANS_L.sas	Replace
Data/bisdata/jobs	FA_DE_L.sas	Replace
Data/bisdata/jobs	FA_FAC_L.sas	Replace
Data/bisdata/jobs	FA_EXT.sas	Replace
Data/bisdata/jobs	FA_APP_APPT.sas	Replace
Data/bisdata/jobs	FP_APPND_PRD_TYPE_L.sas	Replace
Data/bisdata/jobs	IO_EXT.sas	Replace
Data/bisdata/jobs	IO_ALL_LVL.S.sas	Replace
Data/bisdata/jobs	EP_ALL_LVL.S.sas	Replace
Data/bisdata/jobs	FP_ALL_LVL.S.sas	Replace
Data/bisdata/jobs	CAS_EXT_CSAM.sas	Replace
Data/bisdata/jobs	APS_EXT_CSAM.sas	Replace
Data/bisdata/jobs	CS_SCORING_INPUT.sas	Replace
Data/bisdata/jobs	CS_MONITORING_MODEL.sas	Replace
Data/bisdata/jobs	VARIABLE_EXT.sas	Replace
Data/bisdata/jobs	SCORE_CARD_VARIABLE_DIM.sas	Replace
Data/bisdata/jobs	FPA_ACCT_SCR.sas	Replace
Data/bisdata/jobs	MOD_VAR_GRP.sas	Replace

Path under server context SasMain folder	Affected filename	Changes done
Data/bisdata/jobs	MOD_VAR_GRP_SCR.sas	Replace
Data/bisdata/jobs	ACCT_MOD_VAR_SCR.sas	Replace
Data/bisdata/jobs	MOD_VAR_SCR.sas	Replace
Data/bisdata/jobs	ACCT_SCR_RANGE.sas	Replace
Data/bisdata/jobs	SCORE_RANGE_PRE_FACT.sas	Replace
Data/bisdata/jobs	SCORE_CARD_PRE_FACT.sas	Replace
Data/bisdata/jobs	TRG_SCR_TIME_ACT_KEY.sas	Replace
Data/bisdata/jobs	AM_EXT.sas	Replace
Data/bisdata/jobs	CBA_EXT.sas	Replace
Data/bisdata/jobs	CBAC_EXT.sas	Replace
Data/bisdata/jobs	CBI_EXT.sas	Replace
Data/bisdata/jobs	CC_EXT.sas	Replace
Data/bisdata/jobs	CCO_EXT.sas	Replace
Data/bisdata/jobs	CRA_EXT.sas	Replace
Data/bisdata/jobs	CUS_EXT.sas	Replace
Data/bisdata/jobs	DE_EXT.sas	Replace
Data/bisdata/jobs	EO_EXT.sas	Replace
Data/bisdata/jobs	EOFD_EXT.sas	Replace
Data/bisdata/jobs	FAC_EXT.sas	Replace
Data/bisdata/jobs	FAR_EXT.sas	Replace
Data/bisdata/jobs	FP_EXT.sas	Replace
Data/bisdata/jobs	IC_EXT.sas	Replace
Data/bisdata/jobs	ICAD_EXT.sas	Replace
Data/bisdata/jobs	LA_EXT.sas	Replace
Data/bisdata/jobs	MA_EXT.sas	Replace
Data/bisdata/jobs	REC_EXT.sas	Replace
Data/bisdata/jobs	FA_APPT_FOR_DIM_EXT.sas	Replace
Data/bisdata/jobs	FA_APP_FOR_DIM_EXT.sas	Replace
Data/bisdata/jobs	APPLICATION_PD_RK.sas	Replace
Data/bisdata/jobs	APPLICATION_ANALYSIS_FACT.sas	Replace
Data/bisdata/jobs	AM_POOL_SCHEME_APS_TRANSPOSED.sas	Replace
Data/bisdata/jobs	SCORE_CARD_VARIABLE_FACT_PDA_DEVN.sas	Add
Data/bisdata/jobs	SCORE_CARD_VARIABLE_FACT_PDA_DEVY.sas	Add

Table 5. Macro Code

Path under server context SasMain folder	Affected filename	Changes done
Data/bisdata/macro/analytics	write_back_dds.sas	Replace
Data/bisdata/macro/analytics	addlabelstoabt.sas	Replace
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/outcome_variables/a ccount_snapshot	ote_acc_snap_lst_abt.sas	Replace
Data/bisdata/macro/pooling	build_sel_abt.sas	Replace
Data/bisdata/macro/computations/common	conf_interval.sas	Replace
Data/bisdata/macro/computations/common	check_alldefaults_nodfaults.sas	Replace
Data/bisdata/macro/computations/common	ci.sas	Replace
Data/bisdata/macro/computations/common	pool_stability_index.sas	Replace
Data/bisdata/macro/factupdatations	load_pd_model_measure_fact.sas	Replace
Data/bisdata/macro/factupdatations	load_score_card_variable_fact.sas	Replace
Data/bisdata/macro/factupdatations	load_applpd_model_measure_fact.sas	Replace
Data/bisdata/macro/factupdatations	load_ccf_model_measure_fact.sas	Replace
Data/bisdata/macro/factupdatations	load_lgd_model_measure_fact.sas	Replace
Data/bisdata/macro/factupdatations	load_model_measure_fact.sas	Replace
Data/bisdata/macro/factupdatations	load_pd_score_card_variable_fact.sas	Replace
Data/bisdata/macro/feedmacros	feed_pd_appl_pool.sas	Replace
Data/bisdata/macro/feedmacros	feed_measure.sas	Replace
Data/bisdata/macro/computations/pd	roc_stat.sas	Replace
Data/bisdata/macro/computations/pd	conf_matrix.sas	Replace
Data/bisdata/macro/computations/pd	brier.sas	Replace
Data/bisdata/macro/computations/pd	hl_pd.sas	Replace
Data/bisdata/macro/computations/pd	cs_rep_data_prep.sas	Replace
Data/bisdata/macro/computations/pd	distance_stats.sas	Replace
Data/bisdata/macro/computations/pd	kend_somers.sas	Replace
Data/bisdata/macro/computations/pd	pd_ci.sas	Replace
Data/bisdata/macro/feedmacrosmip	feed_measure_mip.sas	Replace
Data/bisdata/macro/feedmacrosmip	feed_pd_appl_pool_mip.sas	Replace
Data/bisdata/macro/feedmacrosmip	feed_pd_pool_mip.sas	Replace
Bisdata/macro/computations/modelinputs	get_chi_square_table.sas	Replace
Bisdata/macro/computations/modelinputs	ks.sas	Replace
Data/bisdata/macro/computations/pd	ks_stat.sas	Replace

Path under server context SasMain folder	Affected filename	Changes done
Data/bisdata/macro/computations/modelinputs	stability_indices.sas	Replace
Data/bisdata/macro/display	draw_table.sas	Replace
Data/bisdata/macro/pooling	build_all_abt.sas	Replace
Data/bisdata/macro/pooling	build_sel_abt.sas	Replace
Data/bisdata/macro/pooling	create_pool_abt.sas	Replace

Table 6. Stored Process Code

Path under server context SasMain folder	Affected filename	Changes done
Data/bisdata/storedprocs/analytics	build_abt.sas	Replace
Data/bisdata/storedprocs/analytics/explore_abt	expabt_create_tree.sas	Replace
Data/bisdata/storedprocs/analytics/explore_abt	add_var.sas	Replace
Data/bisdata/storedprocs/analytics/pop_am	save_am.sas	Replace
Data/bisdata/storedprocs/conf	create_tree.sas	Replace
Data/bisdata/storedprocs/analytics/templates	template_step5.sas	Replace
Data/bisdata/storedprocs/analytics/scoring	scr_template_step4.sas	Replace
Data/bisdata/storedprocs/modelinputs	shift_index.sas	Replace
Data/bisdata/storedprocs/pd	roc.sas	Replace
Data/bisdata/storedprocs/pd	ks.sas	Replace
Data/bisdata/storedprocs/modelinputs	model_attrib.sas I added this	Replace
Data/bisdata/storedprocs/modelinputs	model_attrib_event.sas	Replace
Data/bisdata/storedprocs/common	test_levels.sas.	Replace
Data/bisdata/storedprocs/pd	score_validation.sas	Replace
Data/bisdata/storedprocs/pooling	build_pool_abt.sas	Replace
Data/bisdata/storedprocs/pooling	build_scheme_data.sas	Replace
Data/bisdata/storedprocs/pooling	build_scheme_pd_pool.sas	Replace
Data/bisdata/storedprocs/pooling	build_scheme_rating_pool.sas	Replace
Data/bisdata/storedprocs/pooling	build_scheme_score_pool.sas	Replace
Data/bisdata/storedprocs/pooling	deploy_pool_scheme.sas	Replace
Data/bisdata/storedprocs/pooling	pool_main.sas	Replace

3.4 Installing the Server-Side Components

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 the [Create a Backup](#) section and then proceed further with the installation. Refer to the [List of Files Added or Replaced](#) section to get the prerequisite information

about the new and existing files. This information will help you during the installation procedure to confirm your decisions while replacing existing files.

Make sure that the contents of the installable files are extracted at the same location (**SASMain/Data**) as that of the earlier installation.

Note: The **SASMain** folder is available in the SAS Configuration folder.

Also, check if appropriate permissions are granted to all files and folders in the **Data** folder.

3.4.1 Installing Common Components

Perform the steps explained in the following subsections, depending upon whether the operating system on the server is Windows or UNIX

3.4.1.1 Install Common Components on Windows Server

Extract the `bis_crs_4.3_cc_hf2_installable_server_for_windows.zip` file to the **SASMain/Data** folder.

3.4.1.2 Install Common Components on UNIX Server

Extract the `bis_crs_4.3_cc_hf2_installable_server_for_unix.tar.gz` file to the **SASMain/Data** folder.

Note: While extracting the `bis_crs_4.3_cc_hf2_installable_server_for_windows.zip` file under **SASMain/Data** folder, a prompt about overwriting existing files will be popped up. Select the option “Yes to All” and overwrite the existing files.

3.4.2 Installing Credit Scoring Components

Perform the steps that are explained in the following subsections, depending on whether the operating system on the server is Windows or UNIX.

3.4.2.1 Install Credit Scoring Components on Windows Server

Extract the `bis_crs_4.3_hf2_installable_server_for_windows.zip` file to the **SASMain/Data** folder.

Note: While extracting the `bis_crs_4.3_hf2_installable_server_for_windows.zip` file under **SASMain/Data** folder, a prompt about overwriting existing files will be popped up. Select the option “Yes to All” and overwrite the existing files.

3.4.2.2 Install Credit Scoring Components on UNIX Server

Extract the `bis_crs_4.3_hf2_installable_server_for_unix.tar.gz` file to the **SASMain/Data** folder.

Note: While extracting the `bis_crs_4.3_hf2_installable_server_for_unix.tar.gz` file under **SASMain/Data** folder, a prompt about overwriting existing files will be popped up. Select the option “Yes to All” and overwrite the existing files.

3.5 Creating Data Sets for Common Components

The procedures that are involved in creating configuration and sample data sets are performed in the Source Editor of SAS Data Integration Studio. Hence, before performing the steps that are involved in the following subsections, log to SAS Data Integration Studio with administrative privileges.

3.5.1 Configure Parameters

1. Locate the `crs_hf2_parameter_script.sas` file. After you have installed the common components on the server, this file will be available in the **Data/bisdata/code/parameter** folder.
2. Make sure that you have backed up the data sets parameters, which are located in the **Data/bisdata/param** folder.
3. Run the following code in the Source Editor of SAS Data Integration Studio.

```
%include
"Data/bisdata/code/parameter/crs_hf2_parameter_script.sas" ;
```

This code updates the existing values of the `ACCT_SCORE_MODEL` and `APP_MODEL` parameters.

3.5.2 Update the bismsg.smd Files

1. Locate the following three files. After you have installed the common components on the server, these files will be copied in the **Data/bisdata/internationalization** folder.
 - a. `crs_hf2_bismsg.smd` (This is the modified **bismsg.smd** file.)
 - b. `crs_hf2_bismsg_config.smd` (This is the modified **bismsg_config.smd** file.)
 - c. `crs_hf2_bismsg_chng.txt` (This file gives information about the changes that need to be done, if the `bismsg.smd` and `bismsg_config.smd` files are to be modified manually.)

2. Modify the `crs_hf2_bismsg.smd` and `crs_hf2_bismsg_config.smd` files. These files can be modified using two methods.

Method 1: Modify the necessary keys in the `bismsg.smd` and `bismsg_config.smd` files by referring to the **Data/bisdata/internationalization/crs_hf2_bismsg_chng.txt** file that gives information about the changes.

This option will enable you to retain the localization changes already made to the files. Moreover, you can also make the required changes in a controlled manner.

- a. Open the `crs_hf2_bismsg_chng.txt` file. After you have installed the common components on the server, this file will be available in the **Data/bisdata/internationalization** folder.
- b. Review the changes that are mentioned in the file and update the `bismsg.smd` and `bismsg_config.smd` files accordingly.

Method 2: Overwrite the `bismsg.smd` and `bismsg_config.smd` files with the files that are given in the Hot Fix 2 package.

This option will overwrite the contents of the `bismsg.smd` and `bismsg_config.smd` files. Hence, you will lose any localization or changes that are already made to these files.

- a. Locate the `crs_hf2_bismsg.smd` file. After you have installed the common components on the server, this file will be available in the **Data/bisdata/internationalization** folder.
 - b. Rename the `crs_hf2_bismsg.smd` file to `bismsg.smd`.
 - c. Locate the `crs_hf2_bismsg_config.smd` file. After you have installed the common components on the server, this file will be available in the **Data/bisdata/internationalization** folder.
 - d. Rename the `crs_hf2_bismsg_config.smd` file to `bismsg_config.smd`.
3. Perform the following steps irrespective of the method that you have selected to modify the `bismsg.smd` and `bismsg_config.smd` files.

- a. Back up the BisMsg and BisMsg_Config data sets present in **Data/bisdata/internationalization/en** folder.
- b. Back up the bismsg.smd and bismsg_config.smd files.
- c. Delete the data sets that are mentioned in step a.
- d. Run the following code in the Source Editor of SAS Data Integration Studio:

Note: Make sure that you run the code in a single SAS session.

```
LIBNAME smd_ds 'Data/bisdata/internationalization/en';
%include
"Data/bisdata/macro/internationalization/smd2ds.sas";
%smd2ds(DIR=Data/bisdata/internationalization/,BASENAME=bis
msg,LOCALE=,LIB=smd_ds);
%smd2ds(DIR=Data/bisdata/internationalization/,BASENAME=bis
msg_config,LOCALE=,LIB=smd_ds);
proc append base=smd_ds.bismsg data=smd_ds.bismsg_config;
run;
```

This code creates new data sets, bismsg.sas7bdat and bismsg.sas7bndx in the **Data/bisdata/internationalization/en** folder.

- e. Restart the object spawner to ensure that the messages or labels are updated.

3.5.3 Update ABT Framework Metadata

1. Locate the crs_hf2_abt_metadata.sas file. After you have installed the common components on the server, this file will be available in the **Data/bisdata/code/frame_work_script** folder.
2. Back up the following data sets, which are located in the **Data/bisdata/analytics** folder.
 - Var_Master
 - Table_X_Job
 - Job_X_Level
 - Var_Table
 - Outcome_Master
3. Run the following code in the Source Editor of SAS Data Integration Studio.

```
%include
"Data/bisdata/code/frame_work_script/crs_hf2_abt_metadata.sas
" /lrecl=1024;
```

This code performs the following tasks:

- inserts jobs in the Parameter_List_Model_Jobs data set, which is located in the **Data/Bisdata/Control** folder
- removes duplicate records that are present in the Var_Master data set, which is located in the **Data/bisdata/analytics** folder
- inserts a few jobs in the Table_X_Job and Job_X_Level data sets, which is located in the **Data/bisdata/analytics** folder
- inserts a row in the Var_Table data set (located in the **Data/bisdata/analytics** folder) for APPL_BASIC_X_PROD_ABT
- modifies the outcome description for application related outcomes in the Outcome_Master dataset (located in the **Data/bisdata/analytics** folder)

3.5.4 Checklist for Detail Data Store in Oracle

Perform the following checks, only if you have your Detail Data Store (DDS) in Oracle:

1. Check the DDS library definition in the `autoexec.sas` file. The default library definition is as follows:

```
LIBNAME dds "Data/bisdata/dds";
```
2. Comment this library definition
3. Add a LIBNAME statement as per your Oracle DDS library. Refer to *SAS Detail Data Store for Banking Implementation and Administration Guide – Appendix 9*.

3.6 Creating Credit Scoring Data Sets

The procedures that are involved in creating Credit Scoring data sets are performed in SAS Data Integration Studio. Hence, before performing the steps involved in the following subsections, log to SAS Data Integration Studio with administrative privileges.

3.6.1 Update Credit Scoring Additions Mart Job Dependency

1. Locate the `crs_hf2_credit_scoring_mart.sas` file. After you have installed the Credit Scoring components on the server, this file will be available in the **Data/bisdata/code/foundation_job_dependency** folder.
2. Back up the `Parameter_List_Credit_Scoring` data set, which is located in the **Data/bisdata/control** folder
3. Run the following code in the Source Editor of SAS Data Integration Studio

```
%include
"Data/bisdata/code/foundation_job_dependency/crs_hf2_credit_s
coring_mart.sas";
```

This code performs the following changes in `PARAMETER_LIST_CREDIT_SCORING` dataset:

- inserts new jobs, `Cas_Ext_Csam`, `Aps_Ext_Csam`, `Account_Score_Pre_Detail`, `Account_Score_Detail`, `Application_Score_Pre_Detail`, and `Application_Score_Detail`, `SCORE_CARD_VARIABLE_FACT_PDA_DEVY`, `SCORE_CARD_VARIABLE_FACT_PDA_DEVN`
- changes the levels for the existing jobs in Credit Scoring Additions mart
- removes the jobs, `Am_Ext_Abt_Fw`, `Analytical_Model_Pre_Dim`, and `Analytical_Model_Dim` from the `Parameter_List_Credit_Scoring` data set

3.6.2 Update the Measure Dimension

1. Locate the `crs_hf2_measure_dim.sas` and `crs_hf2_score_cv_dim.sas` files. After you have installed the Credit Scoring components on the server, this file will be available in the **Data/bisdata/code/foundation_script/dimension** folder.
2. Back up the `Measure_Dim` and `Score_card_variable_dim` data sets that is located in the **Data/bisdata/dim** folder.

3. Run the following code in the Source Editor of SAS Data Integration Studio:

```
%include
"Data/bisdata/code/foundation_script/dimension/crs_hf2_measur
e_dim.sas" ;

%include
"Data/bisdata/code/foundation_script/dimension/crs_hf2_score_
cv_dim.sas" ;
```

This code updates the Measure_Nm column for Kolmogorov-Smirnov statistic to append the * symbol as a suffix.

Also the VARIABLE_NAME column length is increased by this code.

3.6.3 Run Initial One-Time Format Job

To generate the correct format for Model Monitoring reports:

1. Expand **Repositories ▶ Foundation ▶ SAS Data Integration Studio Custom Tree ▶ CREDIT_SCORING_ADDITIONS ▶ INITIAL_ONE_TIME_JOB**.
2. Run the **Formats_For_Model_Monitoring_Report** job.
3. Check the log and ensure that the format is created successfully.

3.6.4 Copy Middle-Tier Image Files

1. Copy the following files available in **/Data/bisdata/** to the **CSReports/help/gifs** folder that is available in the Middle tier and overwrite the existing files. For example, the typical folder to copy this gif file will be **<SAS Configuration path>/<Level>/CSReports/help/gifs**.
 - evnt_stb.gif
 - validation_score_1.gif
 - var_stb.gif
2. Restart the middle-tier service.

3.7 Installing Metadata Using SAS Data Integration Studio Client

Importing metadata that is affected as a result of the hot fix is a resource-intensive process. During the import process, it is recommended to close all other applications, services, and daemon. The data that is imported should be verified in the SAS Data Integration Studio environment.

3.7.1 Install Metadata Import Export Tool

Metadata Import Export Tool (MIET) is used for importing the metadata of tables

To install MIET:

1. In the **installables/MIET** folder of the installation pack, locate the following files:
 - Metadata_Import_V1.6.jar
 - User Manual_V1.6.doc
2. Close the SAS Data Integration Studio environment if it is open.
3. Copy the Metadata_Import_V1.6.jar file that is present in the **Installables/MIET** folder to the SAS Data Integration Studio **plugins** folder. For example, the SAS Data Integration Studio installation directory can be **C:/Program Files/SAS/SASETLStudio/9.1/plugins**.

4. Log on to SAS Data Integration Studio with administrative privileges.
5. On the **Tools** menus, make sure that the **Components Import Wizard** option is visible.

3.7.2 Install the Common Tables Metadata

1. Extract the `Installables/bis_crs_4.3_cc_hf2/bis_crs_4.3_cc_hf2_installable_client.zip` file to a location, which will subsequently be referred to as `<ZIP_Extracted_CC_Location>`.
2. Log on to SAS Data Integration Studio with administrative privileges.
3. On the **Tools** menu, select **Components Import Wizard**. Alternatively, you can also select this option from the Shortcuts window.

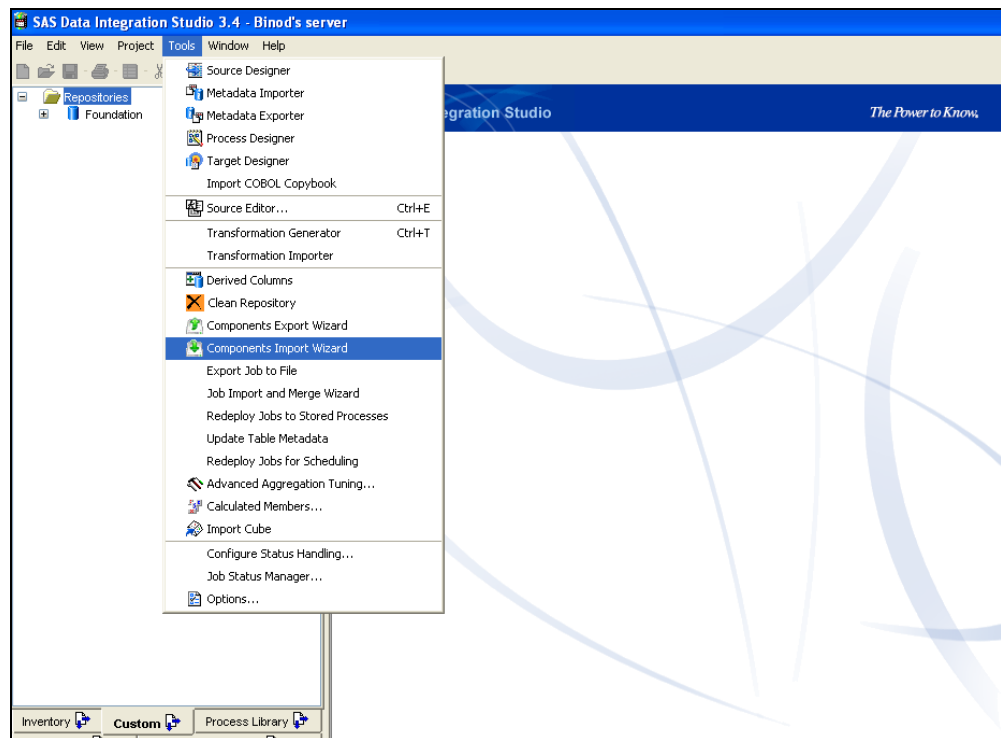


Figure 1. Components Import Wizard Menu Option

4. On the Welcome screen, click **Next**.
5. On the Solution Folder Choice Page dialog box, specify the location of the `<ZIP_Extracted_CC_Location>/Client_Pack` folder in the **Solution Directory** field and then click Next.

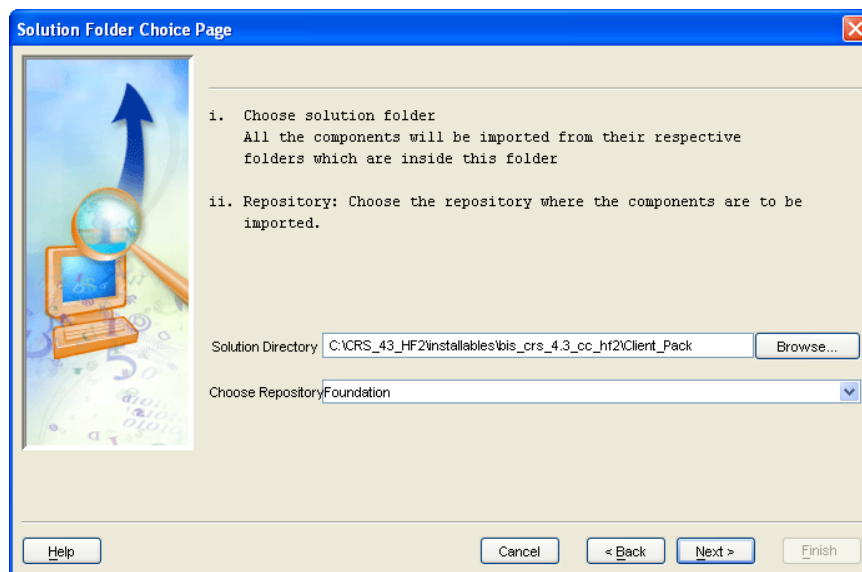


Figure 2. Common Tables Import – Solution Folder Choice Page

6. Select Yes on the Confirm dialog box to confirm the selection of the **Foundation** repository.
7. In the Component Choice Page window, expand the folders in the left pane to view the items within it.

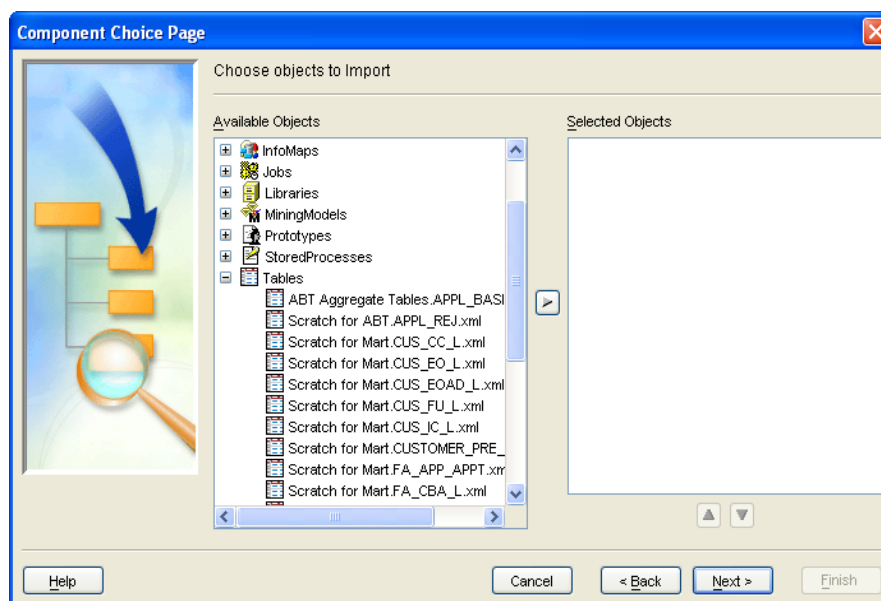



Figure 3. Common Tables Import – Component Choice Page

8. Select the **Tables** that you want to import and then click  to move them to the right pane.

Note: It is recommended that all the objects and their items be imported together. To select an object with the entire content, select the object and move it to the right pane.

9. Click Next.

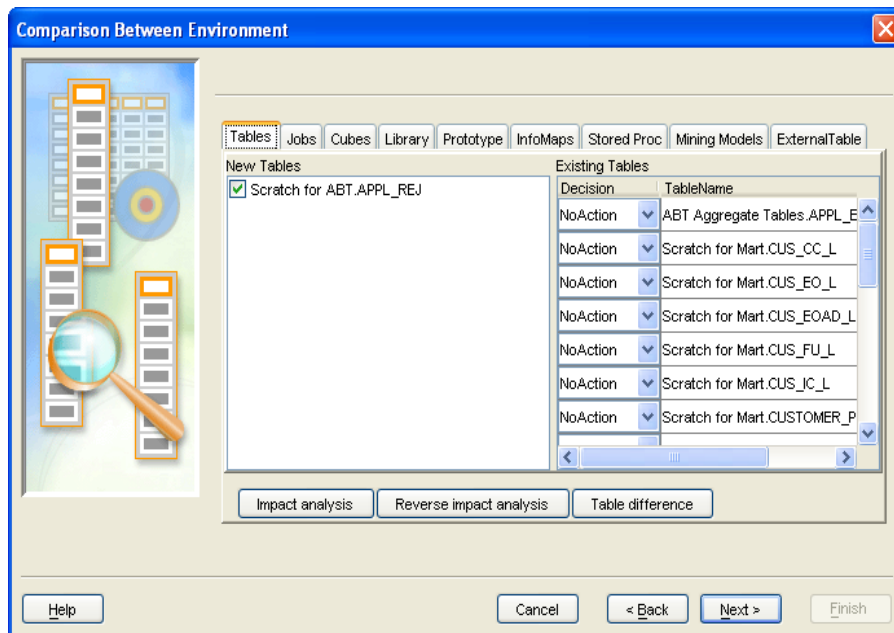


Figure 4. Common Tables Import – Comparison Between Environment : Tables

10. In the Comparison Between Environment window, select **Update All** (the last point from the drop down box) from the **Decision** list for all the tables that are displayed in the **Existing Tables** list. As a result, the table columns and table level attributes are updated. Click **Table difference** to view the differences.
10. In the Comparison Between Environment window, ensure that the new table Scratch for ABT.APPL_REJ is selected.

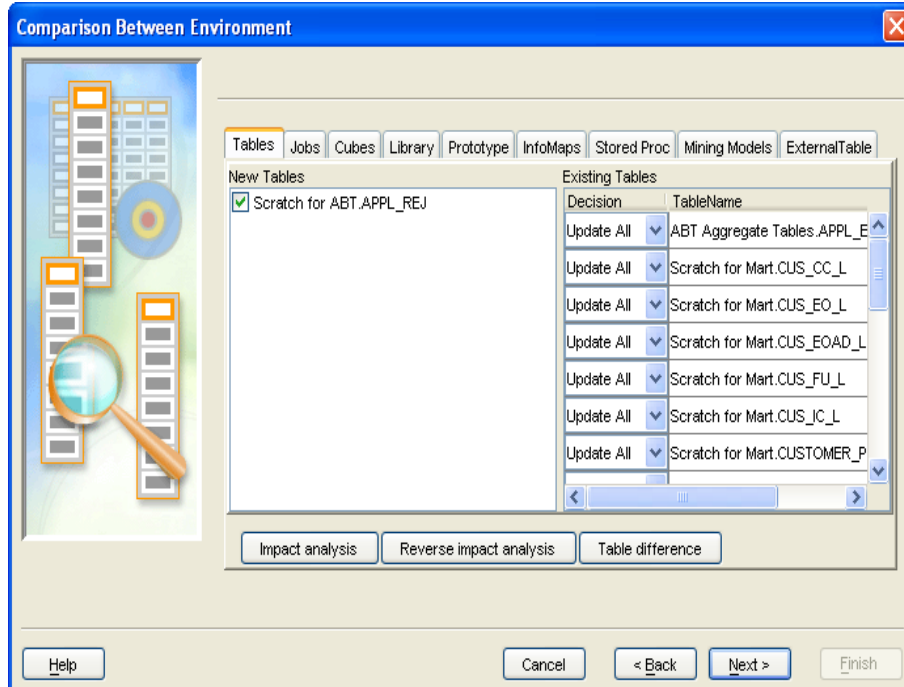


Figure 5. Common Tables Import – Decision for Existing Tables

11. Click **Next**. The summary window appears.
12. Click **Finish**. Check for errors. This step completes the installation of the Common Tables metadata.

3.7.2.2 Install Credit Scoring Tables Metadata

1. Extract the **Installables/bis_crs_4.3_crs_hf2/bis_crs_4.3_hf2_installable_client.zip** file to a location, which will be subsequently referred as **<ZIP_Extracted_Crs_Location>**.
2. Log on to SAS Data Integration Studio with administrative privileges.
3. On the **Tools** menu, select **Components Import Wizard**. Alternatively, you can also select this option from the Shortcuts window.
4. On the Welcome screen, click **Next**.
5. On the Solution Folder Choice Page, specify the location of the **<ZIP_Extracted_Crs_Location>/Client_Pack** folder in the **Solution Directory** field.

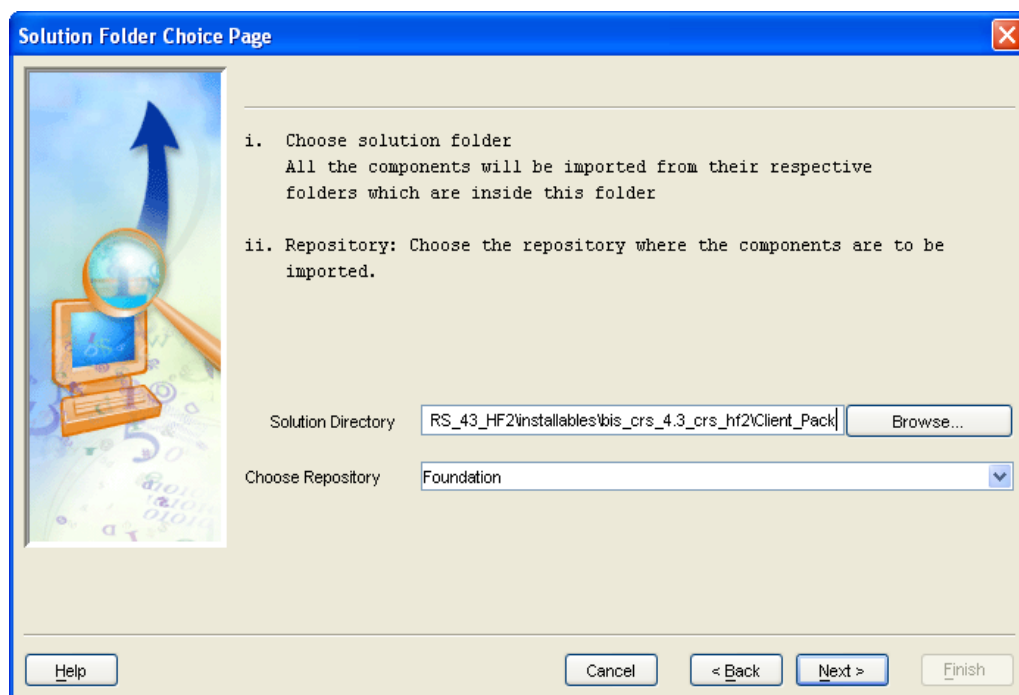


Figure 6. Credit Scoring Tables Import – Solution Folder Choice Page

6. Click **Next**.
7. On the Confirm dialog box, select **Yes** to confirm the selection of the **Foundation** repository.
8. On the Component Choice Page window, expand the folders to view the items within it.

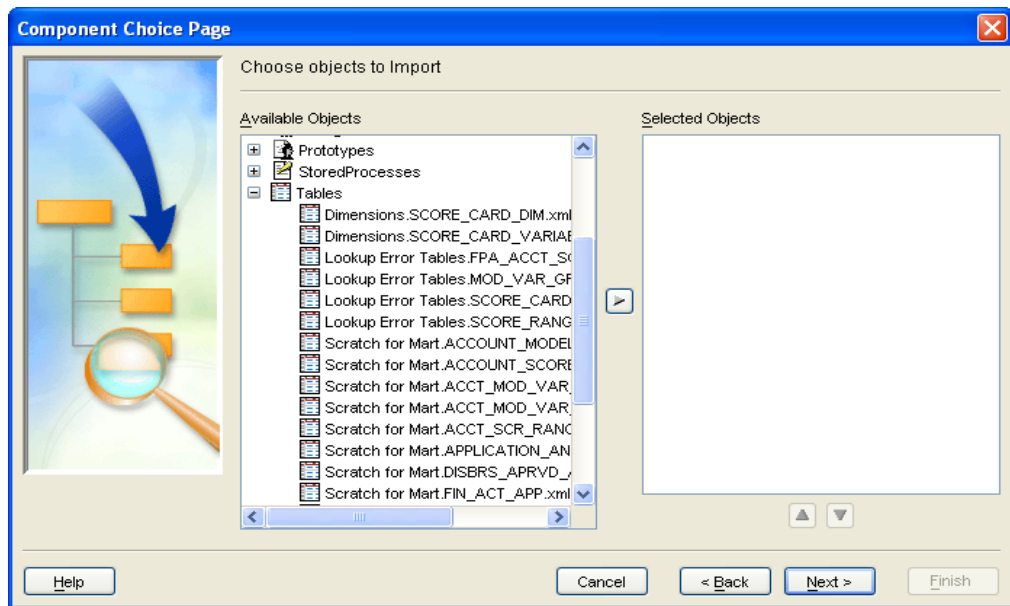




Figure 7. Credit Scoring Tables Import – Component Choice Page

9. From the **Tables** object, select the tables that are to be imported and then click  to move them to the right pane of the window.

Note: Due to certain dependencies, it is recommended that all the objects and their items be imported in a single import. To select an object with all its content, select the object and click .

10. Click Next.

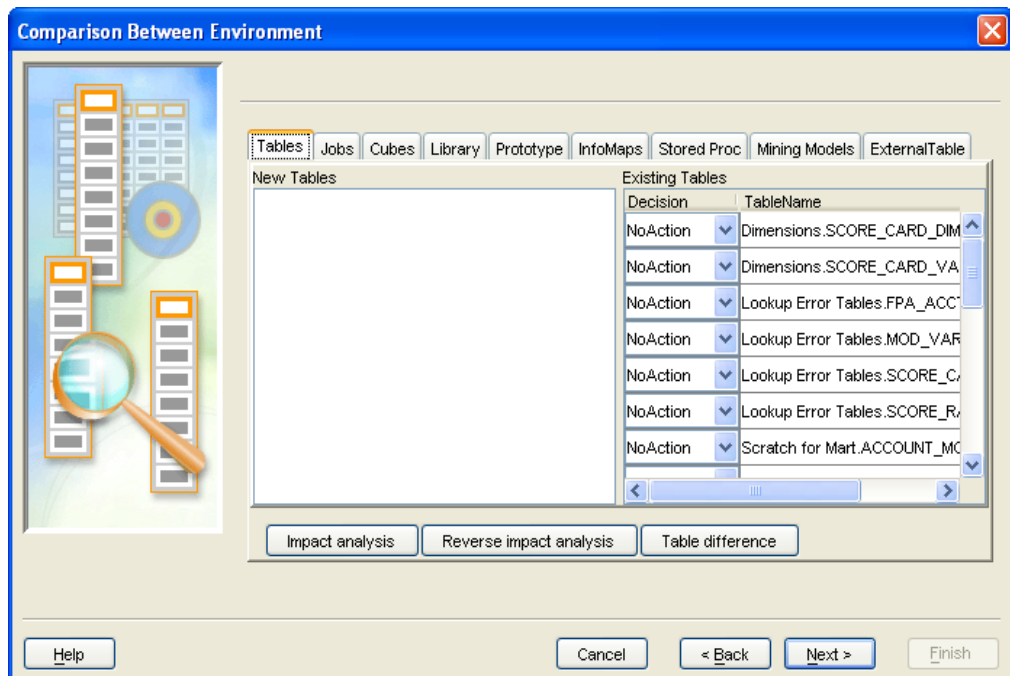


Figure 8. Credit Scoring Tables Import – Comparison Between Environment: Tables

11. In the Comparison Between Window, select **Update All** (the last point from the drop down box) from the **Decision** table for each table that is listed in the **Existing Tables** list except the tables - **APPLICATION_ANALYSIS_LOOK_UP**, **DISBRS_APRVD_AMT**, **FIN_ACT_APP**, **FIN_APP_FU** and **FIN_APP_SCR_AMT**. For these five tables, select **Add XML Del Meta** (the third option from the bottom of the

Decision list). As result, all the table columns and table level attributes are updated.
Click **Table difference** to view the differences.

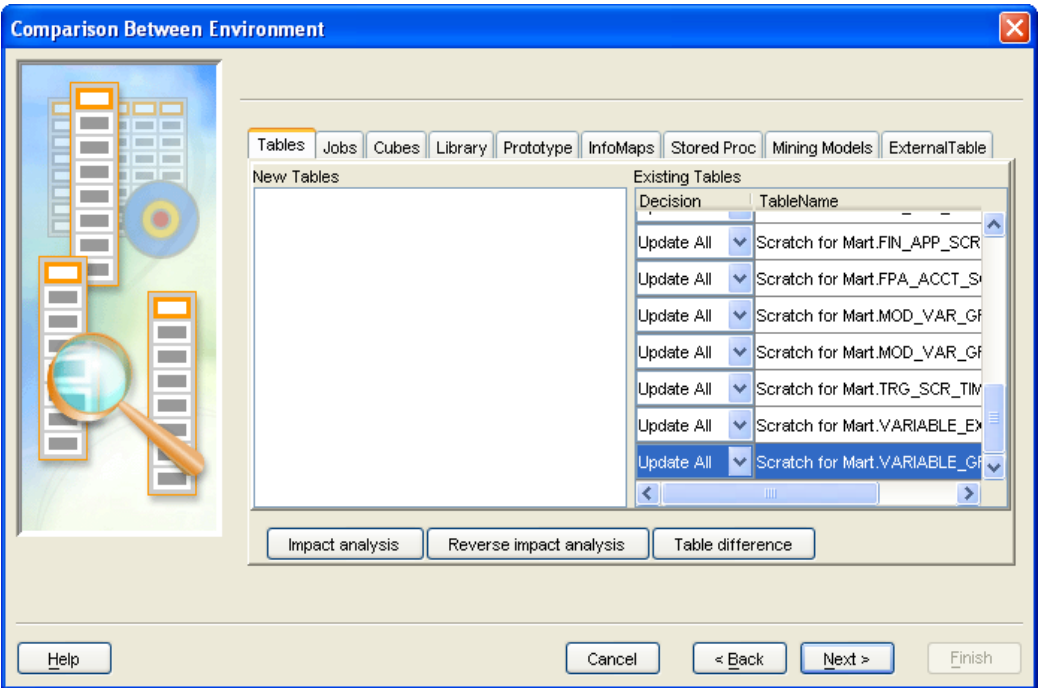


Figure 9. Credit Scoring Tables Import – Decision for Existing Tables – Part 1

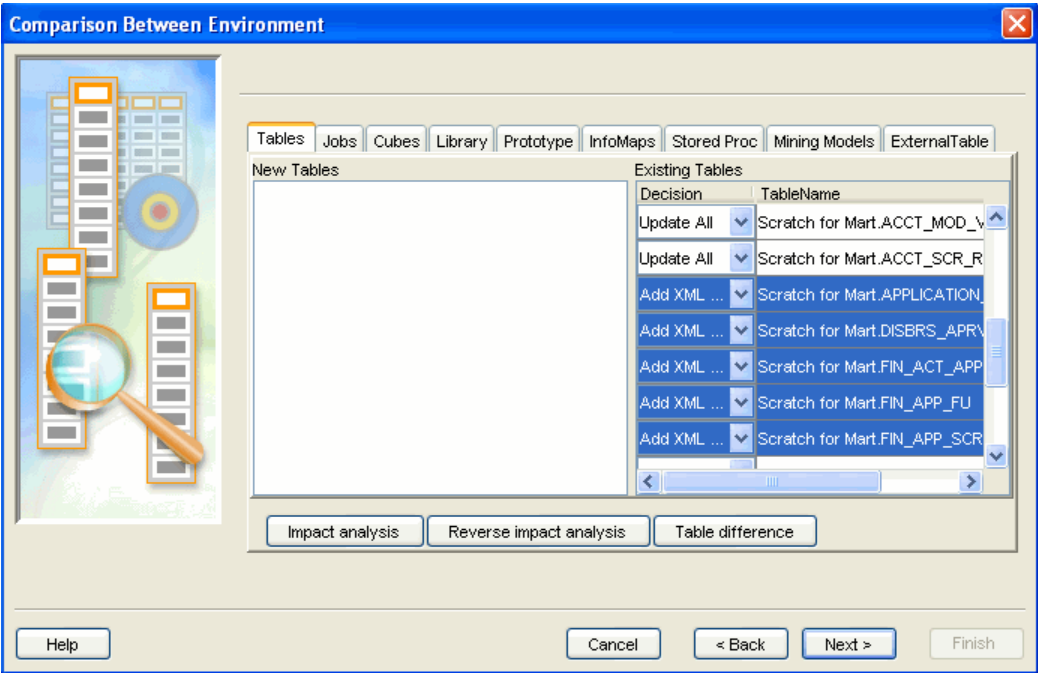


Figure 10. Credit Scoring Tables Import – Decision for Existing Tables – Part 2

12. Click **Next**. The summary window appears.
13. Click **Finish**. Check for errors. This step completes the installation of the Credit Scoring Solution Tables metadata.

3.7.2.3 Install Common Jobs Metadata

The common jobs metadata is imported using the import feature of SAS Data Integration Studio. This procedure installs the following jobs, which are changed in the Hot Fix. Make sure that you take a backup of the following jobs before proceeding with further installation.

Table 7. Foundation Mart Common Jobs for Backup

Job name	Location in SAS Data Integration Studio
ACCOUNT_SCORE_PRE_DETAIL.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DETAILS.ACCOUNT_SCORE_DETAIL
ACC_DEF_EVENT_CURR_EXT.sas	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.ABT_PRE_REQUISITE_JOBS
ACC_DEF_EVENT_CURR_LKP.sas	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.ABT_PRE_REQUISITE_JOBS
ACC_DEF_EVENT_X_ACC_DIM.sas	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.ABT_PRE_REQUISITE_JOBS
AM_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
AM_EXT_ABT_FW.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
APPLICATION_SCORE_PRE_DETAIL.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DETAILS.APPLICATION_SCORE_DETAIL
APPL_BASIC_ABT.sas	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_APPLICATION.APPL_BASIC
APPL_REJ.sas	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.APPL_PD_VARIABLES
APS_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
BC_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CAS_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CBAC_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CBA_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD

Job name	Location in SAS Data Integration Studio
CBI_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CCO_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CC_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CED_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CMS_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
ControlABTModelJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_AM_LOAD
ControlModelingABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_MODELING_ABT
ControlScoringABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_SCORING_ABT
ControlStarSchemaJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_STAR_SCHEMA
CON_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CRA_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CREDIT_BUREAU_DETAIL.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DETAILS.CREDIT_BUREAU_DETAIL
CREDIT_BUREAU_PRE_DETAIL.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DETAILS.CREDIT_BUREAU_DETAIL
CUSTOMER_PRE_DIM.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.PRE_DIMENSIONS
CUSTOMER_SCORE_DETAIL.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DETAILS.CUSTOMER_SCORE_DETAIL
CUSTOMER_SCORE_PRE_DETAIL.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DETAILS.CUSTOMER_SCORE_DETAIL
CUS_CC_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD
CUS_CUS_BASIC_CURR_AB_T.sas	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_CUSTOMER_DIRECT. CUS_BASIC

Job name	Location in SAS Data Integration Studio
CUS_EOAD_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD
CUS_EO_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD
CUS_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CUS_FU_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD
CUS_IC_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD
DE_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
EOFD_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
EO_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
EP_ALL_LVL.S.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD
FAC_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
FAR_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
FA_APPT_FOR_DIM_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
FA_APP_APPT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DETAILS.CORPORATE_FINANCIAL_DETAIL
FA_APP_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DETAILS.CORPORATE_FINANCIAL_DETAIL
FA_APP_FOR_DIM_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
FA_CBAC_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.ACCOUNT_SNAPSHOT_PRE_FACT
FA_CBA_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.ACCOUNT_SNAPSHOT_PRE_FACT
FA_CCAC_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.ACCOUNT_SNAPSHOT_PRE_FACT

Job name	Location in SAS Data Integration Studio
FA_CUSXFA_FPA_FP_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.A CCOUNT_SNAPSHOT_PRE_FACT
FA_DE_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.A CCOUNT_SNAPSHOT_PRE_FACT
FA_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LO AD
FA_FAC_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.A CCOUNT_SNAPSHOT_PRE_FACT
FA_FARST_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.A CCOUNT_SNAPSHOT_PRE_FACT
FA_MAC_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.A CCOUNT_SNAPSHOT_PRE_FACT
FA_MCMP_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.A CCOUNT_SNAPSHOT_PRE_FACT
FA_TRANS_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.A CCOUNT_SNAPSHOT_PRE_FACT
FA_UP_SELL_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS.ACCOUNT_SNAPSHOT.A CCOUNT_SNAPSHOT_PRE_FACT
FIN_ACCT_RST_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LO AD
FPA_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LO AD
FP_ALL_LVL_S.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD
FP_APPND_PRD_TYPE_L.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD
FP_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LO AD
ICAD_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LO AD
IC_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LO AD
IO_ALL_LVL_S.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.JOIN_FOR_MART_LOAD

Job name	Location in SAS Data Integration Studio
IO_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
LA_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
LoopABTModelJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_AM_LOAD
LoopModelingABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_MODELING_ABT
LoopScoringABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_SCORING_ABT
LoopStarSchemaJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_STAR_SCHEMA
MasterLoopModelingABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_MODELING_ABT
MasterLoopScoringABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_SCORING_ABT
MasterLoopStarSchemaJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_STAR_SCHEMA
MA_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
OC_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
OTE_APPL_GOOD_BAD_AB.T.sas	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.APPL_PD_VARIABLES
REC_EXT.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
ACC_SNAP_EXT_12M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP.ACC_SNAP_EXT
ACC_SNAP_EXT_13_24M	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP.ACC_SNAP_EXT
ACC_SNAP_EXT_24M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP.ACC_SNAP_EXT
ACC_SNAP_EXT_3M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP.ACC_SNAP_EXT
ACC_SNAP_EXT_6M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP.ACC_SNAP_EXT

Job name	Location in SAS Data Integration Studio
ACC_SNAP_EXT_CURR	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP .ACC_SNAP_EXT
ACC_SNAP_EXT_LST_12M	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP .ACC_SNAP_EXT
ACC_SNAP_EXT_LST_3M	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP .ACC_SNAP_EXT
ACC_SNAP_EXT_LST_6M	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP .ACC_SNAP_EXT
ACC_SNAP_EXT_LTD	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP .ACC_SNAP_EXT
ACC_SNAP_EXT_PRV	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.L1_ACCOUNT.ACC_SNAP .ACC_SNAP_EXT
ACCOUNT_SNAPSHOT_EXT	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.FACTS_EXTRACT
OTC_CCF_AVG_BAL_CALC	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.L GD_CCF_VARIABLES
OTE_ACC_SNAP_EXT_12M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.R ETENTION_LEVEL_VARIABLES.OTE_ACC_SNAP_EXT
OTE_ACC_SNAP_EXT_1M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.R ETENTION_LEVEL_VARIABLES.OTE_ACC_SNAP_EXT
OTE_ACC_SNAP_EXT_2M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.R ETENTION_LEVEL_VARIABLES.OTE_ACC_SNAP_EXT
OTE_ACC_SNAP_EXT_3M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.R ETENTION_LEVEL_VARIABLES.OTE_ACC_SNAP_EXT
OTE_ACC_SNAP_EXT_6M_BCK	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.R ETENTION_LEVEL_VARIABLES.OTE_ACC_SNAP_EXT
OTE_ACC_SNAP_EXT_CURR	SAS Data Integration Studio Custom Tree.ABT_AGGREGATE_TABLES.OUTCOME_VARIABLES.R ETENTION_LEVEL_VARIABLES.OTE_ACC_SNAP_EXT

Note: Importing metadata is resource intensive process. It is advisable to keep all other applications and services /daemon closed during the import process. It is recommended that after each import, SAS Data Integration Studio should be reopened. Verification of imported data should be done in the reopened SAS Data Integration Studio environment.

To enhance the import performance it is advisable to increase the buffer memory of SAS Data Integration Studio. This can be achieved by modifying the memory size in the in the `.../SAS/SASETLStudio/9.1/etlstudio.ini` file. For example, in Windows this file can be located in the following folder:
C:/Program Files/SAS/SASETLStudio/9.1.

To import metadata for the changed jobs:

1. Log on SAS Data Integration Studio with administrative privileges.
2. Right-click the **SAS Data Integration Studio Custom Tree** folder, and then select **Import**.

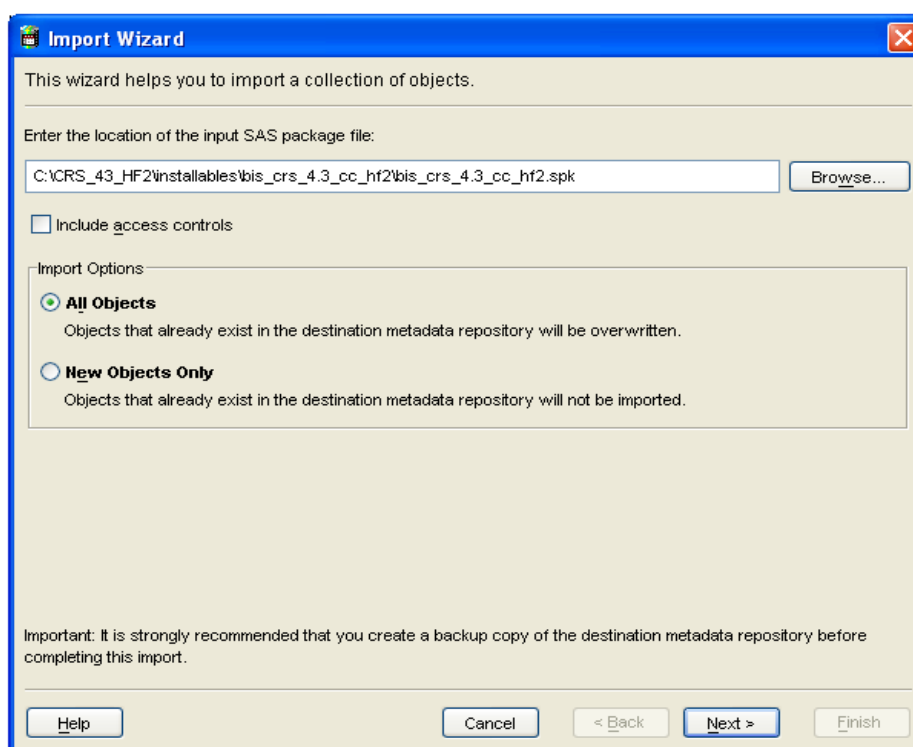


Figure 11. Common Jobs Import – Select Location

3. Specify the following location details for objects that are to be imported:
 - a. Click **Browse**. In the **<ZIP_Extracted_CC_Location>** path, select the `bis_crs_4.3_cc_hf2.spk` file.
 - b. Do not select the **Include Access Control** check box.
 - c. Select **All Objects** from the **Import Options**.
 - d. Click **Next**.
4. The objects that are to be imported are displayed in the window. Expand the folders to view the items within it.

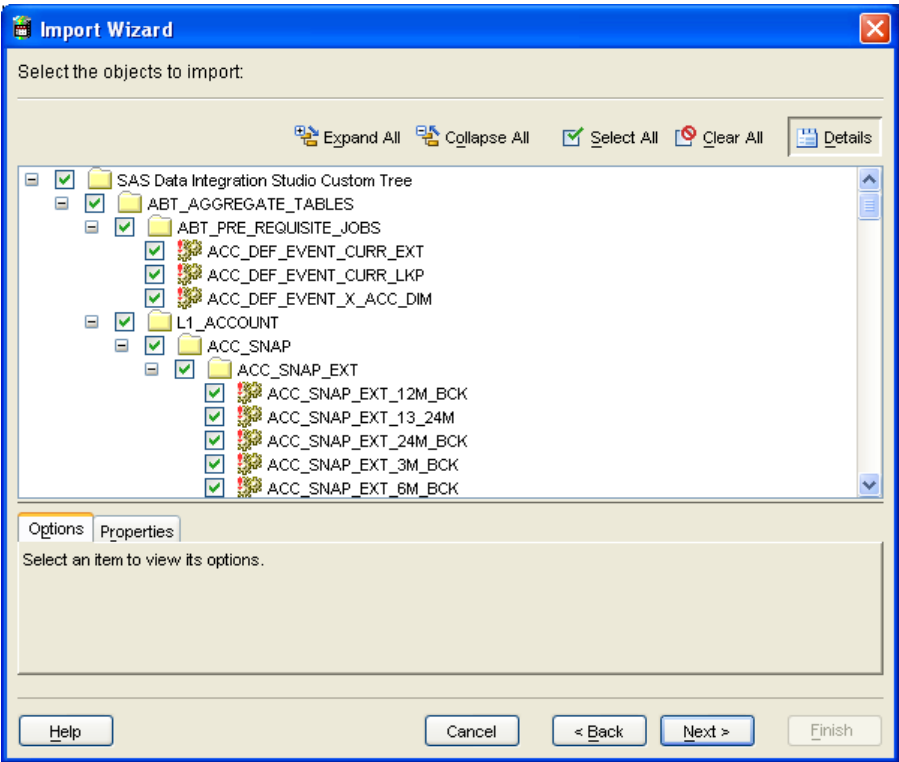


Figure 12. Common Jobs Import – Objects to be Imported

5. Click **Next**.

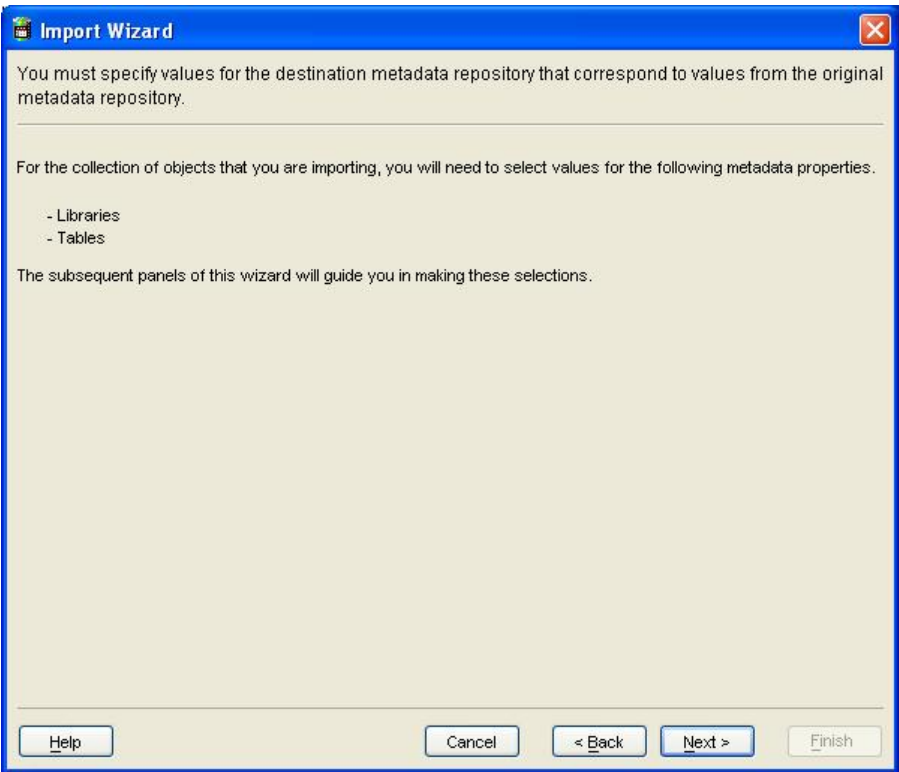


Figure 13. Common Jobs Import – Libraries and Tables Summary

6. Click **Next**. The target locations are displayed in the window.

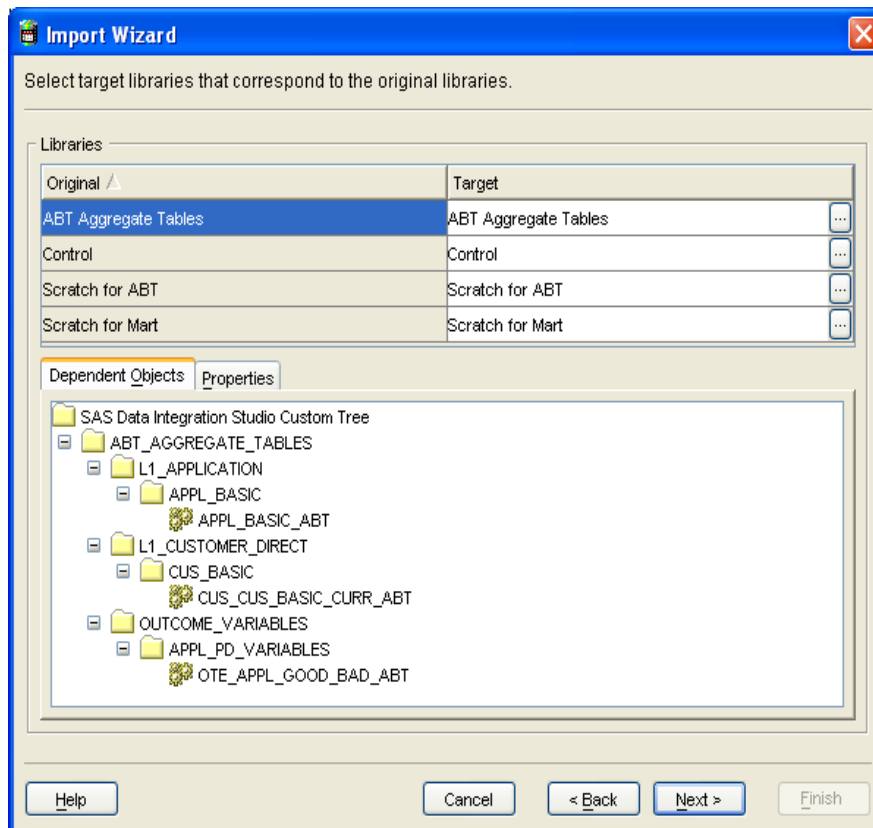


Figure 14. Common Jobs Import – Target Locations

7. Select the **Target** tables and then click **Next**.

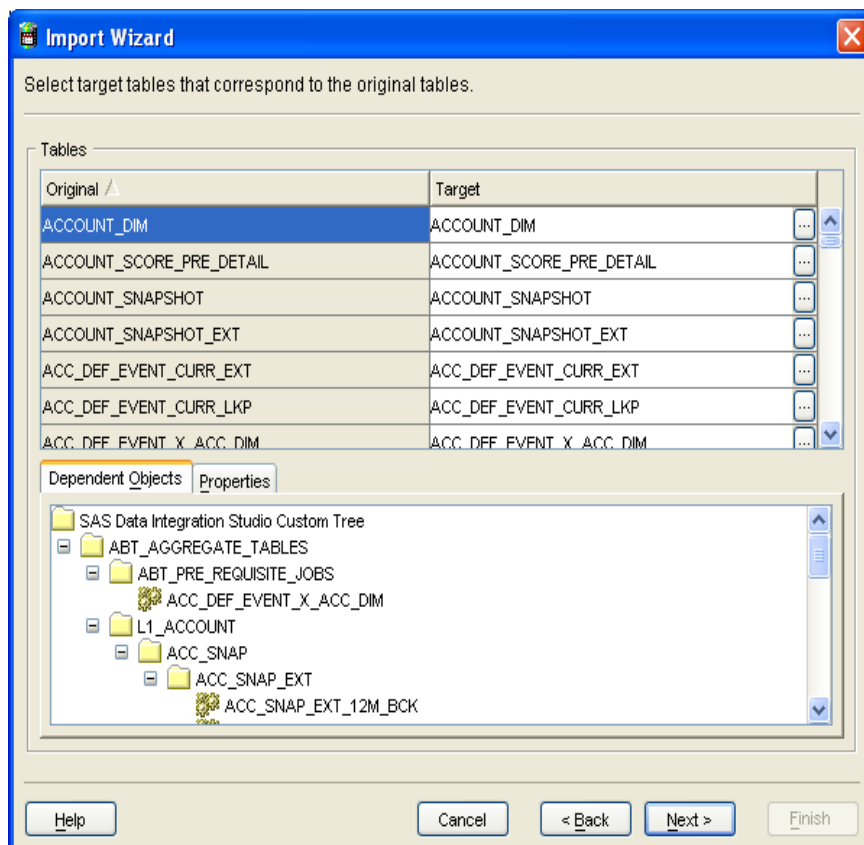


Figure 15. Common Jobs Import – Select Target Tables

8. On the Summary screen, confirm the details of the objects that are to be imported.

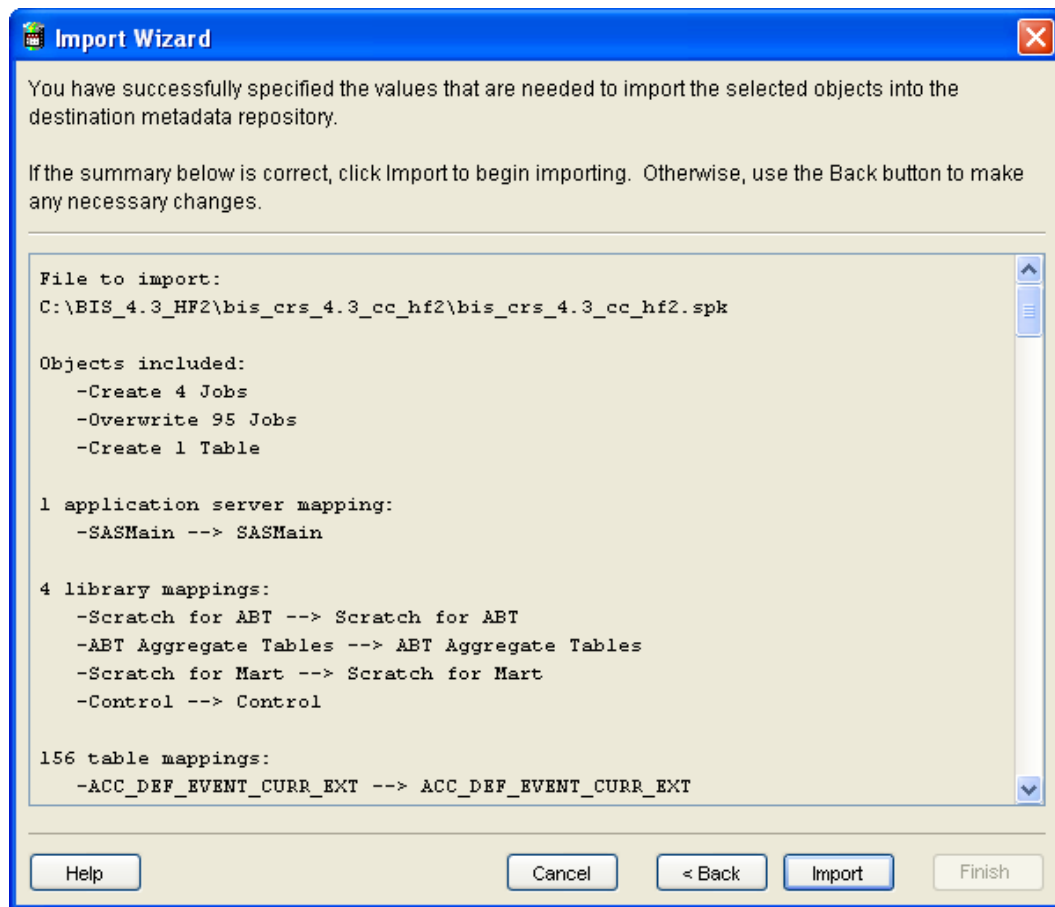


Figure 16. Common Jobs Import – Summary Screen

9. Click **Import** to start the import process. A progress indicator is displayed in the window. Depending on your hardware configuration, this process might take more time for completion.
10. On successful completion of import, the Import Wizard window displays a completion message. All the objects are now imported into the SAS Data Integration Studio environment.

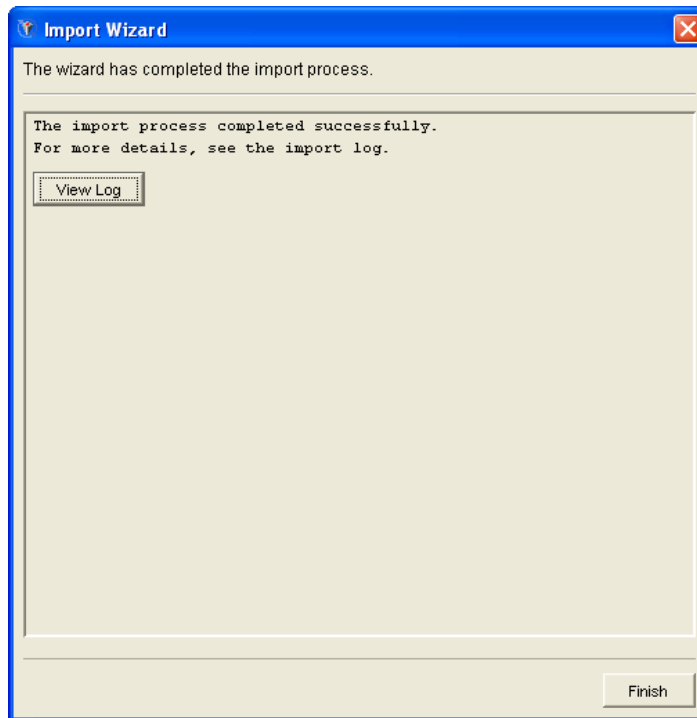


Figure 17. Common Jobs Import – Completion Message

If any error is displayed, click **View Log** to get more information about the errors.

11. Click **Finish**.

3.7.2.4 Install Credit Scoring Jobs Metadata

The Credit Scoring job metadata are imported using the import feature of SAS Data Integration Studio. This procedure installs the following jobs, which have been changed in the Hot Fix. Take a backup of following jobs before proceeding further.

Table 8. Credit Scoring Jobs for Backup

Job name	Location in SAS Data Integration Studio
ACCT_MOD_VAR_SCR.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_DIM
ACCT_SCR_RANGE.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_RANGE_FACT.SCORE_RANGE_FACT_DATA_PREP
AM_CAS_LGD.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.ACCOUNT_LGD_FACT.ACCOUNT_LGD_FACT_DATA_PREP
AM_POOLSCHEME_CAS_TRANSPOSED.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.COMMON_FOR_CREDIT_SCORING
AM_POOL_SCHEME_APS_TRANSPOSED.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_PD_FACT.APPLICATION_PD_FACT_DATA_PREP
APPLICATION_ANALYSIS_FACT.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_ANALYSIS_FACT

Job name	Location in SAS Data Integration Studio
APPLICATION_ANALYSIS_LOOK_UP.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_ANALYSIS_FACT.APPLICATION_ANALYSIS_FACT_DATA_PREP
APPLICATION_PD_RK.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_PD_FACT.APPLICATION_PD_FACT_DATA_PREP
APP_LOW_HIGH_SIDE.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_ANALYSIS_FACT.APPLICATION_ANALYSIS_FACT_DATA_PREP
APS_AM.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_ANALYSIS_FACT.APPLICATION_ANALYSIS_FACT_DATA_PREP
APS_AM_PD.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_PD_FACT.APPLICATION_PD_FACT_DATA_PREP
APS_EXT_CSAM.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
CAS_AM_CCF.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.ACCOUNT_CCF_FACT.ACCOUNT_CCF_FACT_DATA_PREP
CAS_AM_PD.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.ACCOUNT_PD_FACT.ACCOUNT_PD_FACT_DATA_PREP
CAS_EXT_CSAM.sas	SAS Data Integration Studio Custom Tree.FOUNDATION_MART.DDS_EXTRACT_FOR_MART_LOAD
ControlCreditScoringJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_CREDIT_SCORING
ControlPoolingABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_POOLING_AB_T
CS_MONITORING_MODEL.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.MODEL_INPUT
CS_SCORING_INPUT.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.MODEL_INPUT
DISBRS_APRVD_AMT.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_ANALYSIS_FACT.APPLICATION_ANALYSIS_FACT_DATA_PREP
FIN_ACT_APP.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_ANALYSIS_FACT.APPLICATION_ANALYSIS_FACT_DATA_PREP

Job name	Location in SAS Data Integration Studio
FIN_APP_FU.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_ANALYSIS_FACT.APPLICATION_ANALYSIS_FACT_DATA_PREP
FIN_APP_SCR_AMT.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_ANALYSIS_FACT.APPLICATION_ANALYSIS_FACT_DATA_PREP
FPA_ACCT_SCR.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_FACT.SCORE_CARD_FACT_PREP
LoopCreditScoringJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_CREDIT_SCORING
LoopPoolingABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_POOLING_AB_T
MasterLoopCreditScoringJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_CREDIT_SCORING
MasterLoopPoolingABTJob.sas	SAS Data Integration Studio Custom Tree.CONTROL.SCHEDULING.SCHEDULE_POOLING_AB_T
MOD_VAR_GRP.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_DIM
MOD_VAR_GRP_SCR.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_DIM
MOD_VAR_SCR.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_DIM
SCORE_CARD_DIM.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_DIM
SCORE_CARD_PRE_FACT.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_FACT.SCORE_CARD_PRE_FACT
SCORE_CARD_VARIABLE_DIM.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_VARIABLE_DIM
SCORE_RANGE_PRE_FACT.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_RANGE_FACT.SCORE_RANGE_PRE_FACT

Job name	Location in SAS Data Integration Studio
TRG_SCR_TIME_ACT_KEY.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.ACCOUNT_PD_FACT.ACCOUNT_PD_FACT_DATA_PREP
VARIABLE_EXT.sas	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_VARIABLE_DIM
SCORE_CARD_VARIABLE_FACT_PDA_DEVN	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_VARIABLE_FACT
SCORE_CARD_VARIABLE_FACT_PDA_DEVY	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.SCORE_CARD_VARIABLE_FACT
CCF_PRIOR_AVG_BAL_AMT	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.ACCOUNT_CCF_FACT.ACCOUNT_CCF_FACT_DATA_PREP
VW_ACCTSNPSHT_CCF	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.ACCOUNT_SNAPSHOT_CCF_VW
APPL_PD_ACTUAL_GOOD_BAD	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.APPLICATION_PD_FACT.APPLICATION_PD_FACT_DATA_PREP
VW_VINTAGE_ANALYSIS	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.ACCOUNT_SNAPSHOT_VA_VW
ACCT_SNPSHT_TIME	SAS Data Integration Studio Custom Tree.CREDIT_SCORING_ADDITIONS.COMMON_FOR_CREDIT_SCORING

To import metadata for the changed jobs:

1. Log on SAS Data Integration Studio with administrative privileges.
2. Right-click the **SAS Data Integration Studio Custom Tree** folder, and then select **Import**.

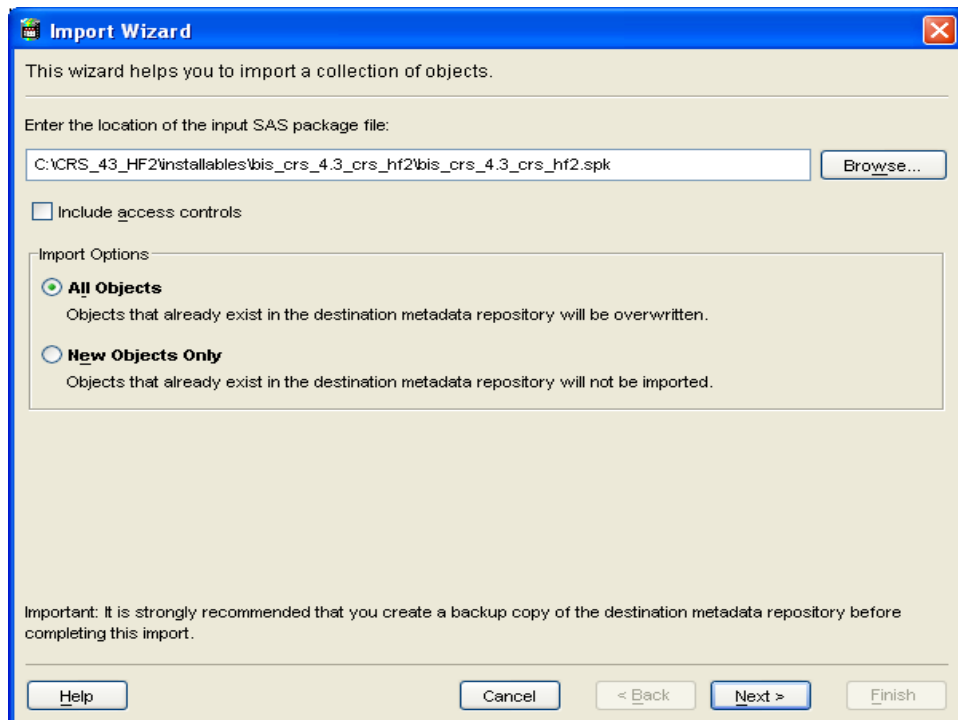


Figure 18. Credit Scoring Jobs Import – Select Location

3. Specify the following location details for objects that are to be imported:
 - a. Click **Browse**. In the <**ZIP_Extracted_Crs_Location**> path, select the bis_crs_4.3_crs_hf2.spk file.
 - b. Do not select the **Include Access** Control check box.
 - c. Select **All Objects** from the **Import Options**.
 - d. Click **Next**.
4. The objects that are to be imported are displayed in the window. Expand the folders to view the items within it.

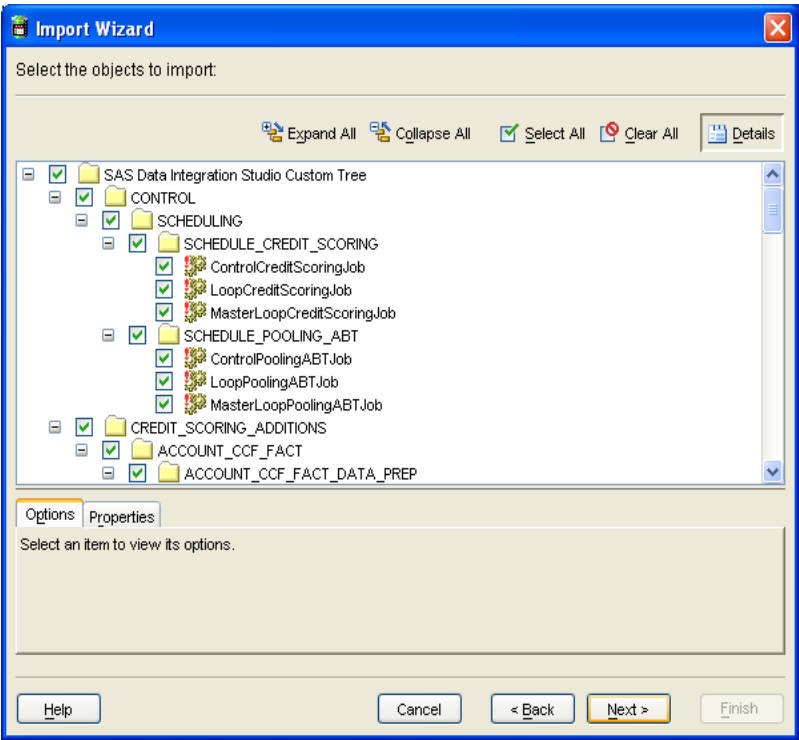


Figure 19. Credit Scoring Jobs Import – Objects to be Imported

5. Click **Next**.

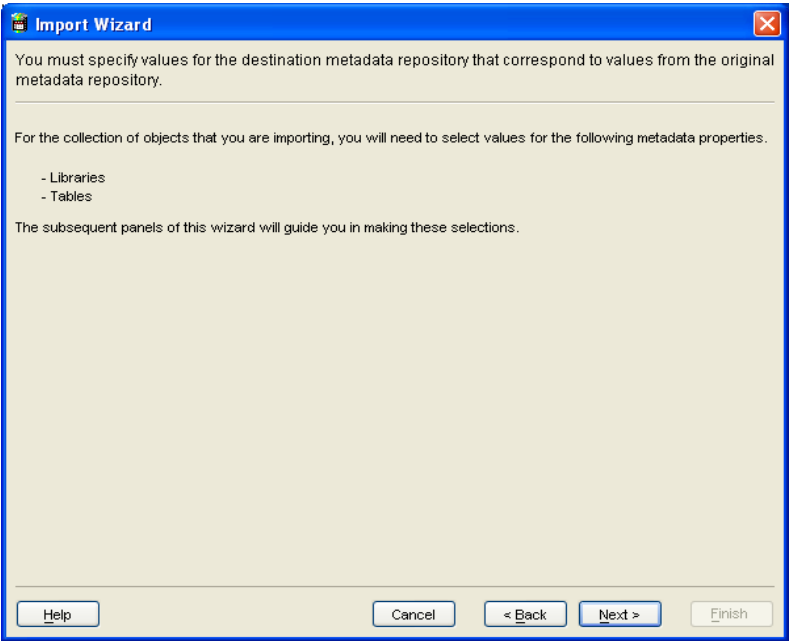


Figure 20. Credit Scoring Jobs Import – Libraries and Tables Summary

6. Click **Next**. The target locations are displayed in the window.

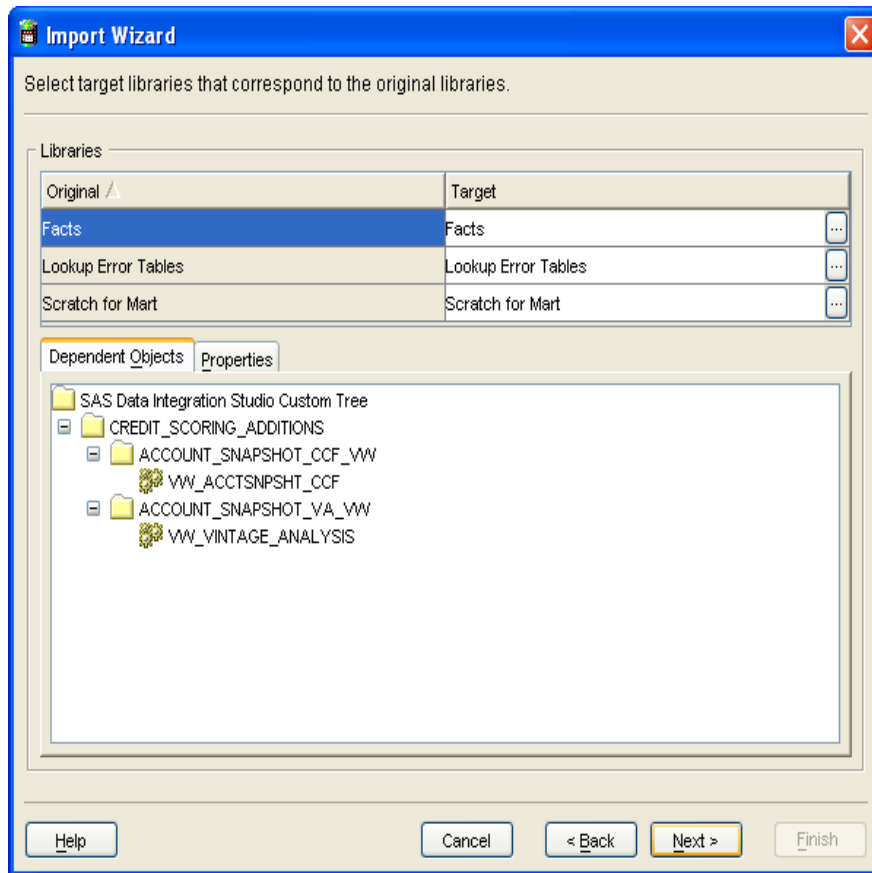


Figure 21. Credit Scoring Jobs Import – Target Locations

7. Select the **Target** tables and then click **Next**.

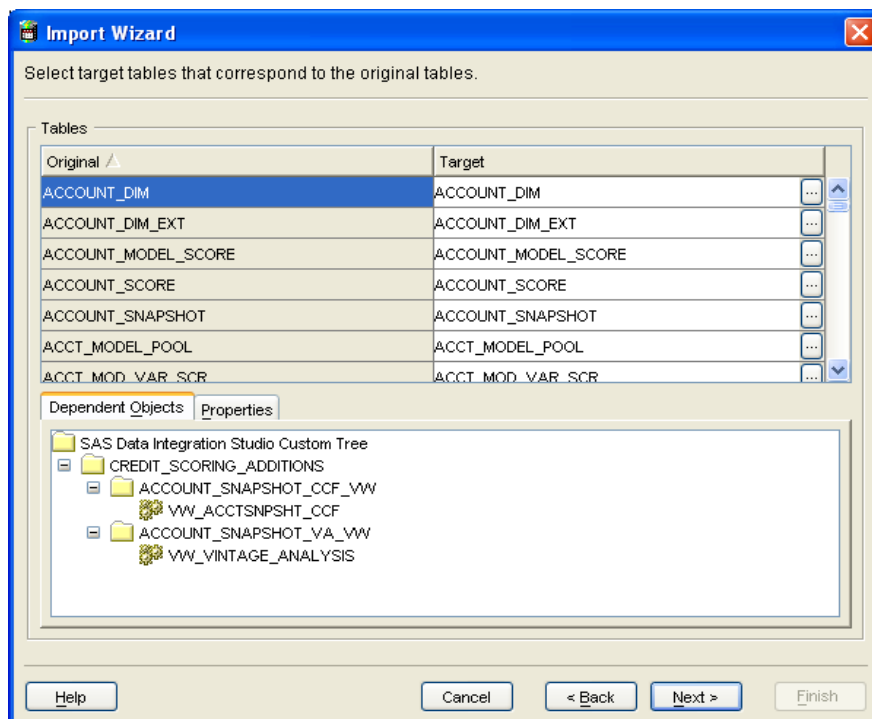


Figure 22. Credit Scoring Jobs Import – Select Target Tables

8. On the Summary screen, confirm the details of the objects that are to be imported.

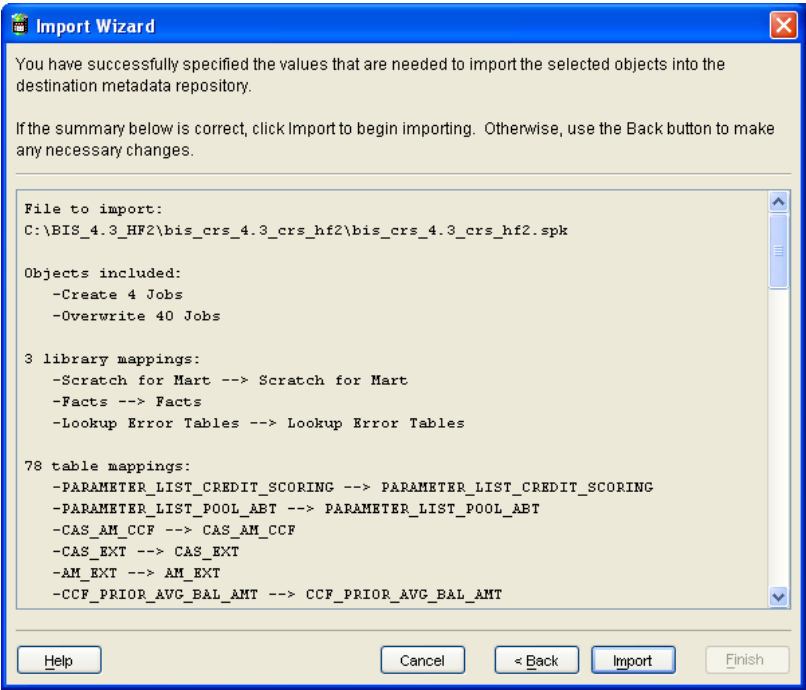


Figure 23. Credit Scoring Jobs Import – Summary Screen

- 9. Click **Import** to start the import process. A progress indicator is displayed in the window. Depending on your hardware configuration, this process might take more time for completion.
- 10. On successful completion of import, the Import Wizard window displays a completion message. All the objects are now imported into the SAS Data Integration Studio environment.

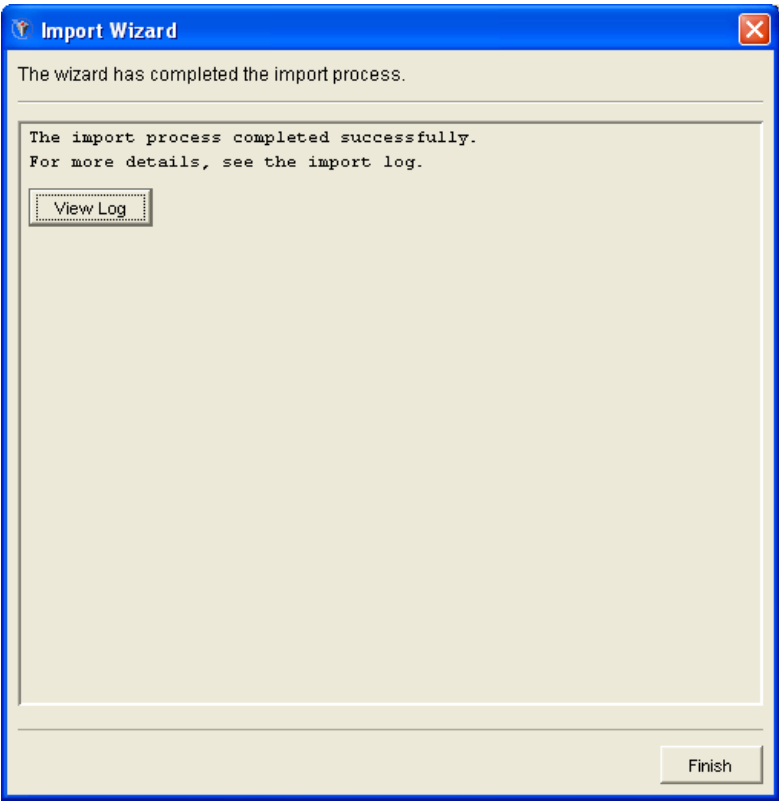


Figure 24. Credit Scoring Jobs Import – Completion Message

If any error is displayed, click **View Log** to get more information about the errors.

11. Click **Finish**. This completes the installation of Hot Fix 2 for Credit Scoring solution 4.3.

3.8 Perform Miscellaneous Tasks

1. Remove metaport information from newly deployed jobs.

Note: Do not perform this step for the deployed jobs that are already available in the package.

2. If ETL jobs are modified, then deploy them to the **Data/bisdata/jobs** folder. However, after deployment, make sure that you delete the metaport information from the .sas files.

The following sample lines of code will be present in the deployed job code. Make sure that you delete it.

```
/* Create metadata macro variables */
%let IOMServer = %nrquote(SASMain);
%let metaPort = %nrquote(58563);
%let metaServer = %nrquote(xisdev2);
%let metaRepository = %nrquote(Foundation);
/* Set metadata options */
options metaport = &metaPort
metaserver = "&metaServer"
metarepository = "&metaRepository";
```

Note: In the above lines of code, **58563** and **xisdev2** are examples of port number and server name.



Documentation Updates

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4.1 Overview of Documentation Updates

As a result of the SAS Credit Scoring for Banking 4.3 Hot Fix 2, the following guides will be modified:

- ☐ *SAS Credit Scoring for Banking 4.3: Data Management Usage Guide*
- ☐ *SAS Credit Scoring for Banking 4.3: Analytical Usage Guide*

4.1.1 Data Management Concepts

Reference

- ☐ *SAS Credit Scoring for Banking 4.3 Data Management Usage Guide*
- ☐ Section 2.2: Data Management Concepts

Changes

In addition to the jobs that are mentioned in this section, run the following job:

1. Expand **Repositories** ▶ **Foundation** ▶ **SAS Data Integration Studio Custom Tree** ▶ **CREDIT_SCORING_ADDITIONS** ▶ **INITIAL_ONE_TIME_JOB**.
2. Run the `Formats_For_Model_Monitoring_Report` job.
3. Select the **Log** tab in SAS Data Integration Studio Process Designer and ensure that all of the steps ran without errors.

4.1.2 Credit Scoring Analytics

Reference

- ☐ *SAS Credit Scoring for Banking 4.3 Analytical Usage Guide*

Changes

1. Section 5.3.1: *Kolmogorov–Smirnov Test*

The title of this section changes to *5.3.1 Modified Kolmogorov–Smirnov Test*

The Modified Kolmogorov-Smirnov test is defined as the maximum distance between two population distributions. The conventional KS test is modified to enhance the use of the same in credit scoring. Modified KS does not take the absolute difference between the distribution of the *goods* and the *bads*.

The modified KS statistic provides the ability to distinguish healthy borrowers from troubled borrowers (usually taken as ability to discriminate defaults from non-defaults).

The Kolmogorov-Smirnov test is defined as the maximum distance between two population distributions.

CPG(Si) = Cumulative probability of the Goods (or Non-Defaults) Class for Pool(i)

CPB(Si) = Cumulative probability of the Bads (or Defaults) Class for Pool(i)

2. Section 5.4.4 Distance Statistics

The formula for D Statistic changes to the following.

$$D = \frac{ABS(\bar{S}_G - \bar{S}_B)}{\sqrt{\frac{(N_B * \sigma_G^2) + (N_G * \sigma_B^2)}{(N_B + N_G)}}$$

3. Section 5.4.6 Brier Score

The new formula for Brier Skill Score (BSS) is as mentioned below. Also mentioned afterwards is new description for the different values of BSS:

$$BSS = 1 - (BS/BST)$$

BSS is greater than 0 for a good system and is less than 0 for a system that performs poorer than the trivial forecast.

4. Section 5.5.11 Variable Stability Index

The new formula to calculate the Variable Stability Index is as mentioned below:

$$\sum_i (A_i - B_i) * \ln\left(\frac{A_i}{B_i}\right)$$

5. Section 5.5.11 Event Stability Index

The Event Stability Index is redefined as:

$$\sum_i (C_i - D_i) * \ln\left(\frac{C_i}{D_i}\right)$$