

CGI Advantage[®] 4

Debt Management Run Sheets Guide



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1 Purpose of the System Administration Guide

This manual is intended to help system administrators initiate, configure, monitor, and control all processing for CGI Advantage. The manual has five parts:

- The CGI Advantage System Administration Guide contains information about the CGI Advantage system architecture, and configuration (including the embedded third party components), post-installation setup, security configuration and considerations, workflow, job framework and its usage/maintenance, and other information pertinent to administering the application.
- The CGI Advantage HRM run sheet guides describe each process of CGI Advantage HRM in detail with its input, output, parameters, sort sequence, and selection criteria.
- The CGI Advantage Financial run sheet guides describe each process of CGI Advantage Financial in detail with its input, output, parameters, sort sequence, and selection criteria.
- The CGI Advantage HRM Payroll Engine System Administration Guide describes the system control tables and utilities for CGI Advantage HRM.
- The CGI Advantage VSS System Administration Guide describes each VSS process in detail with its input, output, parameters, sort sequence, and selection criteria.

System administration tasks include setting up and maintaining application security, querying and viewing the application status through logs and reports, managing workflow, setting up and maintaining system tables, and other critical application maintenance tasks.

1.1 Common terms and glossary used

The terms "Job" and "Batch" have been used interchangeably throughout the document. Please note that the CGI Advantage technical architecture is flexible enough to support the execution of jobs/batch processes while the application is available for online usage. In other words, the jobs/batch processes are technically not required to be "offline" processes.

2 Description of Processes

This chapter describes the processes in CGI Advantage that are considered system administration processes. For each process, you see information on these topics:

- Description
- Steps to Run this Process (if applicable)
- When to Run
- Major Input
- Output
- Parameters – Batch and Custom
- Sort Sequence
- Selection Criteria
- Notes
- Problem Resolution

System Wide Batch Parameters:

System wide batch parameter fields are available with each batch program, which provide the path for the input/output directory. These parameters allow sites to easily and quickly update the path for individual batch processes.

System wide batch parameters can be defined at the System Level, Area Level, Chain Job level, Chain Level or Job level. There has to be a default value set for the system wide batch parameters at any of these levels mentioned above so that the process will generate, read or write the respective files from the given location.

System wide batch parameters are defined at the System Level on the System Level Process Parameters (BATSETUP) reference page, searching for the Catalog Label of *Batch Catalog* and then choosing the record-level action of *Edit*.

- **AMSROOT** - Root directory of the batch files (for example, C:\AMSADV30\RTFiles)
- **AMSEXPORT** - For files that are created by the program and need to remain after the job is completed (i.e. cannot be temporary files). This could include interface files that come from/go to third party sources (for example, \$AMSROOT\ExportImport).
- **AMSIMPORT** - For files that are used by the program and need to remain after the job is completed (that is, cannot be temporary files). This could include interface files that come from/go to third party sources (for example, \$AMSROOT\ExportImport).
- **AMSLOGS** - For batch framework log files. If the job requires its own log files, this is where it is put (for example, \$AMSROOT\Logs).
- **AMSPARM** - Batch job parameter files specific to a single job instance only (for example, \$AMSROOT\Parms).
- **AMSTEMP** - For temporary files, usually stamped with process ID (for example, C:\TEMP).
- **AMSSPOOL** - Batch job report files, statistic files, exception reports, and so forth. These files may be sent to an OS print queue. File name is usually date and time stamped (for example, \$AMSROOT\Spool).

Note:

Assumptions while implementing system wide batch parameters: It is assumed that wherever in the Job processes system wide batch parameter variables (that is, AMSEXPORT, AMSIMPORT, AMSROOT, AMSLOGS, AMSPARM, AMSTEMP, AMSSPOOL) are declared as input parameters, care should be taken to set the overrideable flag for that variable to *true*, otherwise the process may fail.

Pivot Date/Year Validation:

Note:

Assumption for date attributes: Set the Earliest Year (EARLIEST_YEAR) and Latest Year (LATEST_YEAR) on the Application Parameter reference page. When defining the year range, attention should be given to setting a range vast enough to accommodate all system impacts (such as imported transactions). The Job input date/year must lie between the above year range; otherwise, the process will fail.

2.1 Debt Management Batch and Chain Processes

Descriptions of the Debt Management Processes are organized in this section in alphabetical order.

- [Debt Payment & Billing Chain](#)
- [Initial Debt Accounting](#)
- [Long Term Account Reclassification](#)
- [Periodic Debt Accounting Chain](#)

2.1.1 Debt Payment & Billing Chain

Chain or Job Name	Debt Payment & Billing Chain
Recommended Frequency	Nightly is recommended or on another frequent basis
Single Instance Required	Yes
Can be restarted?	Yes
Reports generated	Yes. The following reports are generated: <ul style="list-style-type: none"> • Debt Payment Billing Bypassed Records • Debt Payment Billing Detail or Summary Exceptions

Overview

The Debt Payment & Billing chain has the following jobs. Even though these jobs in the chain can be run individually by disabling other jobs, it is recommended to always run the entire chain.

1. [Debt Payment & Billing](#)
2. [Load & Submit Transactions](#)
3. [Generate Exception Report](#)

The Debt Payment & Billing Chain in Debt Management is a group of jobs that work together to create payment and billing transactions that record the payment or billing for a debt instrument. When debt instruments are set up and activated, users have a choice to record the payment or billing for debt instruments either manually or by running this job. By leaving the Manual Payments/Billings flag unchecked (*false*) for the selected schedule, the system will automatically generate transactions for schedule details.

A special note for record selection pertains to the timeframe where two years are open. Schedule details in the prior year should be recorded into that prior year because that is when they were due. Running the chain on the final day of the year will process the majority of these. However, as debt instruments can be entered late, it is recommended that two chains be run at the start of a new year. The first is a special run with a Selection Date equal to the final day of the prior year and with output parameters supplied to record all activity into the prior year. The subsequent run is the standard one, selecting all schedule details due in the current year and recording them in the current year.

The payment or billing of one or more schedule detail records for debt instruments is a requirement whether system-generated or manually entered. As with other automatic accounting for Debt Management, the Debt Type page supplies one or more event types for generated transactions.

Not every debt instrument record selected will result in transaction creation. Some records are updated by the batch program without creating a transaction. These are listed in the Debt Payment & Billing Bypass Records report. Selection logic for that report is later in this run sheet. Presented first is the selection logic for transaction generation. Please note that the chain job will not update records selected for transaction creation. Instead those transactions created will update the debt instrument record when processed to *Final*.

Record Selection

Records selected for processing from the Loan Registry (LOAN), Lease Registry (LEASE), and Bond Registry (BOND) are those where the following general conditions are met:

- Major Type of Debt batch parameter matches the Major Type of Debt for a Debt Instrument or the batch parameter is *All Types*, and
- Manual Payments/Billing flag on the Schedule record is *unchecked*, and
- Payment Billing Chain Reported flag on the Schedule record is *blank*, and
- Scheduled Date of the Schedule Detail record <= Selection Date Parameter, and
 - Processed On Date of the Schedule Detail record is *blank*, and
 - Schedule Detail Type is *Down Payment, Regular Payment, Purchase Payment, or Renewal Penalty Payment*, and
 - One of the following amount fields is <> \$0.00: Principal, Interest, Other Amount 1, Other Amount 2, Other Amount 3, Other Amount 4, or Other Amount 5.

One or more of the following is done depending on the Major Type of Debt batch parameter:

- Loans
 - The Application/Loan Indicator is *Loan*, and
 - Debt Instrument Status is *Active Loan*, and
 - At least one of the following is true:
 - Bill Principal flag on Schedule is *checked* and the Principal amount of Schedule Detail is <> \$0.00
 - Bill Interest flag on Schedule is *checked* and the Interest amount of Schedule Detail is <> \$0.00
- Leases
 - Debt Instrument Status is *Active Lease*
- Bonds
 - Debt Instrument Status is *Active Bond*

When a schedule detail record is selected, the process will create one of several transaction types based on settings inferred to the debt instrument from the selected Debt Type associated with the instrument. Each transaction created will have at least one accounting line and sometimes more depending on how the debt instrument was setup. Descriptive information about the debt instrument is placed on the header and accounting lines for later recognition. The descriptive information on the accounting line is written to the Accounting Journal for reporting purposes.

One of four types of transactions is created based on the following debt instrument settings:

- Loans:
 - Receivable (RE) when Major Type of Loan is *External Given (EG)*
 - Internal Debt Accounting (IDA) when Major Type of Loan is *Internal (IG)*
 - General Accounting Expense/Expenditure (GAX) when Major Type of Loan is *External Taken (ET)*
- Leases:
 - Payment Request (PRC) when Lessor/Lessee Indication = *Lessee* and Reference transaction fields are in the PO transaction type for Borrower/Lessee

- General Accounting Expense/Expenditure (GAX) when Lessor/Lessee Indication = *Lessee* and Reference transaction fields are blank or in the ABS transaction type for Borrower/Lessee
- Receivable (RE) transaction when Lessor/Lessee Indication = *Lessor*
- Bonds:
 - General Accounting Expense/Expenditure (GAX)

Transaction Creation

Without any consolidation (i.e. Consolidation parameter of 1) the program will create one transaction per debt instrument, subject to any MAX_LINE_LIMIT set for the transaction on the Transaction Components (DCREQ) page in the Administration application.

The first of two consolidation options is by the parent Authorization ID (i.e. Consolidation parameter of 2) to a set of Debt Instrument IDs. With this option the program will attempt to combine all debt instruments selected for a given Authorization ID into a single transaction. The DCREQ limit will again apply and may lead to one or more overflow transactions.

One variant to this Authorization ID consolidation is when the Use Responsible Department batch parameter is *true*. With this setting the Responsible Department is added into the consolidation so that if some debt instruments have one department and others have another within the same authorization, each group of debt instruments is put into separate transactions.

The second consolidation option is by Vendor/Customer code and Address code (i.e. Consolidation parameter of 3). Depending on the type of debt, that information can come from the lender or borrower sections of the debt instrument. Any DCREQ limit will also apply to this option as will the same logic for the Use Responsible Department parameter. This consolidation option is not the same as the Single Payment flag feature found on the Lender Information part of the debt registry as that applies only to generated disbursements from the ABS and PR transactions created by the process.

Please refer to the following table for details about each major type of debt and the sub-types within each in reference to consolidation options 2 and 3. Each is written as if the Use Responsible Department batch parameter is true. If that is not the case, the Responsible Department can be dropped from the summarization. With the creation of a GAX, PRC, or RE transaction, there is only one vendor line per transaction.

Type of Debt / Sub-Type	Option	Summarization
Bond	2	New GAX with each change in Authorization ID, Responsible Department, Paying Agency Vendor/Customer Code, Address ID, and Disbursement Option.*
	3	New GAX with each change in Responsible Department, Paying Agency Vendor/Customer Code, Address ID, and Disbursement Option.*
Lease as Lessor	2	New RE with each change in Authorization ID, Responsible Department, Lessee Vendor/Customer Code, Billing Profile, AR Department, AR Unit, and Address ID.
	3	New RE with each change in Responsible Department, Lessee Vendor/Customer Code, Billing Profile, AR Department, AR Unit, and Address ID.
Lease as	2	New GAX/PRC with each change in Authorization ID, Responsible Department, Paying Agency Vendor/Customer

Lessee		Code, Address ID, and Disbursement Option.*
	3	New GAX/PRC with each change in Responsible Department, Paying Agency Vendor/Customer Code, Address ID, and Disbursement Option.*
Loan as Lender	2	New RE with each change in Authorization ID, Responsible Department, Lessee Vendor/Customer Code, Billing Profile, AR Department, AR Unit, and Address ID.
	3	New RE with each change in Responsible Department, Lessee Vendor/Customer Code, Billing Profile, AR Department, AR Unit, and Address ID.
Loan as Borrower	2	New GAX with each change in Authorization ID, Responsible Department, Paying Agency Vendor/Customer Code, Address ID, and Disbursement Option*.
	3	New GAX with each change in Responsible Department, Paying Agency Vendor/Customer Code, Address ID, and Disbursement Option*
Internal Loan	2	New IDA with each change in Authorization ID
	3	No consolidation so one IDA per Debt Instrument ID.

* Disbursement Category, Disbursement Priority, Disbursement Format, Handing Code, and Single Payment flag

Record Selection

The Debt Payment & Billing process includes two reports. The first report is a Debt Payment Billing Bypassed Records report to list all selected debt instrument records that were either set up to bypass Debt Payment Billing or had settings that caused the record to be skipped. The report has several sections that list records under a reason description for why the record was not selected.

- When the bypassed reason is 'Not Using Automated Accounting,' the system will directly update the Payment Billing Chain Reported flag on the selected schedule. This update prevents later runs of the chain from having to re-evaluate the record and continue to list it in the report.
- When the bypassed reason is 'No Amounts to Pay/Bill' or 'Payment/Billing Suppressed' the system will directly update the Processed On date of the selected schedule detail because no transaction is created to make that update.

The second report, the Transaction Exception Report, lists any Receivable (RE), Internal Debt Accounting (IDA), or General Accounting Expense/Expenditure (GAX), or Payment Request (PRC) transactions that failed to submit to *final* Transaction phase through the Multi-Processor Import job.

Major Input

- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Borrower Information (R_DEBT_BRWR)
- Borrower COA (R_DEBT_BRWRCTG)
- Lender Information (R_DEBT_LNDR)
- Lender COA (R_DEBT_LNDRCTG)
- Schedule (R_DEBT_SCHED)

- Schedule Details (R_DEBT_SCHEDLN)
- Debt Type (DEBTTYPE / R_DEBT_TYPE)

Major Output

- Receivable (RE) transaction
- Internal Debt Accounting (IDA) transactions
- General Accounting Expense/Expenditure (GAX) transactions
- Payment Request (PRC) transactions
- Debt Payment Billing Bypassed Records Report
- Debt Payment Billing Detail Exception or Debt Payment Billing Summary Exception Report
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)

Chain Job Return Codes

The following table shows the potential return codes for the Debt Payment & Billing chain job. Note that the Chain job will end with the highest return code across all of the jobs.

Return Code	Condition
Successful (1)	All of the jobs end successfully.
Warning (4)	One of the jobs in the chain ends with a return code of Warning.
Non-Fatal Error (8)	One of the jobs in the chain ends with a return code of Non-Fatal Error.
Failed (12)	One of the jobs in the chain ends with a return code of Failed.
Terminated (16)	One of the jobs in the chain ends with a return code of Terminated.
System Failure (20)	One of the jobs in the chain ends with a return code of System Failure.

Problem Resolution

If any of the jobs in the chain failed due to application errors it is advisable to restart the job (when possible) after correcting the errors instead of rescheduling the job. Restarting the job will reduce the processing time since the job will resume from where it has last committed and select only the unprocessed records. When restarting is not an option, the entire chain can be run again.

Please refer to the individual jobs for details regarding the specific job processes and problem resolution.

Debt Payment & Billing Chain: Debt Payment & Billing

Job Name	Debt Payment & Billing
Recommended Frequency	See chain job.
Single Instance Required	Yes.
Can be restarted?	Yes. See the “ Overview ” and the “ Problem Resolution ” section for more details.
Reports Generated	Debt Payment Billing Bypassed Records Report

Overview

This first job in the chain performs all record selection, XML file generation, and generates a report of records that did not result in a transaction being created.

This job step consists of the following basic steps:

1. **Parameter Validation:** In this step, the process will verify the parameters. If the parameter validation is successful, the job will go to the next step. Otherwise, the job will end with a return code of *Failed*.
2. **Processing Debt Instrument Records:** In this step this job will create one or more of the following transactions: Receivable (RE), Internal Debt Accounting (IDA), Payment Request (PRC), and General Accounting Expense/Expenditure (GAX) transactions based on criteria described in the chain job part of this run sheet. This step then generates an XML file with those transactions with header and line details. There is a separate transaction for each debt instrument. Although not likely invoked, transaction size is governed by MAX_LINE_LIMIT records for RE_DOC_ACTG, ABS_DOC_ACTG, PR_DOC_COMM, PR_DOC_ACTG, IET_DOC_VEND, and IET_DOC_VEND on the Transaction Required Components (DCREQ) page in the Administration application. When the line limit is crossed, the job will create a subsequent transaction (or transactions) with the remaining lines.
3. **Processing Bypassed Records:** This last step creates the Debt Payment Billing Bypassed Records Report and updates certain records to prevent future selection. (Please see details of this in the chain job section of the run sheet).

Process Steps	Messages
1. Parameter Validation	<ul style="list-style-type: none"> • Validating Batch Parameters • Each valid parameter is listed followed by any value <ul style="list-style-type: none"> • If Type of Debt is not provided, then “Type of Debt is required” is recorded in the job log. • If Type of Debt is provided but is not equal to 1 or 2 or 3 or 4, then “Invalid value for Type of Debt” is recorded in the job log. • If Record Date is provided and is not valid on the Calendar Date (CLDT) table, then “Record Date is not valid on CLDT” is recorded in the job log. • If Record Date is provided but not in the correct format

Process Steps	Messages
	<p>(mm/dd/yyyy), then “Record Date not in correct mm/dd/yyyy format” is recorded in the job log.</p> <ul style="list-style-type: none"> • If Fiscal Year is provided but is not valid on Fiscal Year (FY), then “Fiscal Year is not valid on FY” is recorded in the job log. • If Fiscal Year is provided but is not in the correct format (yyyy), then “Fiscal Year is not in correct yyyy format” is recorded in the job log. • If Accounting Period is provided but the Fiscal Year parameter is not provided, then “Fiscal Year required when Accounting Period specified” is recorded in the job log. • If Accounting Period is not provided but the Fiscal Year associated with the date entered in the Selection Date parameter is a prior Fiscal Year, then “Accounting Period required when Selection Date is prior year” is recorded in the job log. • If the Accounting Period parameter is provided and is not valid on Accounting Period (APD), then “Accounting Period is not valid on APD” is recorded in the job log. • If Budget Fiscal Year is provided and is not valid on Fiscal Year (FY), then “Budget Fiscal Year is not valid on FY” is recorded in the job log. • If Budget Fiscal Year is provided but is not in the correct format (yyyy), then “Budget Fiscal Year is not in correct yyyy format” is recorded in the job log. • If RE transaction code is not provided, then “RE transaction code is required” is recorded in the job log. • If RE transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “RE Transaction Code not valid and active on DCTRL for RE transaction type” is recorded in the job log. • If IET transaction code is not provided, then “IET transaction code is required” is recorded in the job log. • If IET transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “IET Transaction Code not valid and active on DCTRL for IET transaction type” is recorded in the job log. • If ABS Transaction Code is not provided, then “ABS Transaction Code is required” is recorded in the job log. • If ABS Transaction Code is provided but is not valid and active on DCTRL, then “ABS Transaction Code not valid on DCTRL for ABS transaction type and GAX transaction sub type” is recorded in the job log. • If PR transaction code is not provided, then “PR transaction code is required” is recorded in the job log. • If PR transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “PR Transaction Code not valid and active on DCTRL for PR

Process Steps	Messages
	<p>transaction type” is recorded in the job log.</p> <ul style="list-style-type: none"> • If RE Transaction Department code is not provided, then “RE Transaction Department code is required” is recorded in the job log. • If RE Transaction Department code is provided but is not valid and active on Department (DEPT), then “RE Transaction Department code must be valid and active on DEPT” is recorded in the job log. • If IET Transaction Department code is not provided, then “IET Transaction Department code is required” is recorded in the job log. • If IET Transaction Department code is provided but is not valid and active on Department (DEPT), then “IET Transaction Department code must be valid and active on DEPT” is recorded in the job log. • If ABS Transaction Department code is not provided, then “ABS Transaction Department code is required” is recorded in the job log. • If ABS Transaction Department code is provided but is not valid and active on Department (DEPT), then “ABS Transaction Department code must be valid and active on DEPT” is recorded in the job log. • If PR Transaction Department code is not provided, then “Department code is required” is recorded in the job log. • If PR Transaction Department code is provided but is not valid and active on Department (DEPT), then “PR Transaction Department code must be valid and active on DEPT” is recorded in the job log. • If RE Transaction Unit Code is provided but is not valid and active on Unit (UNIT), then “RE Transaction Unit Code not valid and active on UNIT” is recorded in the job log. • If IET Transaction Unit Code is provided but is not valid and active on Unit (UNIT), then “IET Transaction Unit Code not valid and active on UNIT” is recorded in the job log. • If ABS Transaction Unit Code is provided but is not valid and active on Unit (UNIT), then “ABS Transaction Unit Code not valid and active on UNIT” is recorded in the job log. • If PR Transaction Unit Code is provided but is not valid and active on Unit (UNIT), then “PR Transaction Unit Code not valid and active on UNIT” is recorded in the job log. • If an Automatic Transaction Numbering (ADNT) record for the RE Transaction Code, RE Transaction Department Code, and RE Transaction Prefix cannot be found, then “ADNT entry not found for RE Transaction Code” is recorded in the job log. • If an ADNT record for the IET Transaction Code, IET

Process Steps	Messages
	<p>Transaction Department Code, and IET Transaction Prefix cannot be found on ADNT, then “ADNT entry not found for IET Transaction Code” is recorded in the job log.</p> <ul style="list-style-type: none"> • If an ADNT entry for the ABS Transaction Code, ABS Transaction Department Code, and ABS Transaction Prefix cannot be found on ADNT, then “ADNT entry not found for ABS Transaction Code” is recorded in the job log. • If an ADNT entry for the PR Transaction Code, PR Transaction Department Code, and PR Transaction Prefix cannot be found on ADNT, then “ADNT entry not found for PR Transaction Code” is recorded in the job log. • If Selection Date is provided and is not valid on Calendar Date (CLDT), then “Selection Date is not valid on CLDT” is recorded in the job log. • If Selection Date is provided but not in the correct format (mm/dd/yyyy), then “Selection Date not in correct mm/dd/yyyy format” is recorded in the job log. • If Commit Size is not provided, then “Commit Size defaulted to 1000” is recorded in the job log. • If Commit Size is not a valid integer greater than zero, then “Commit Size’ must be a positive whole number greater than zero” is recorded in the job log. • If Progression Counter is not provided, then “Progression Counter defaulted to 1000” is recorded in the job log. • If Progression Counter is not a valid integer greater than zero, then “Progression Counter’ must be a positive whole number greater than zero” is recorded in the job log. • If Exception Report Type is not provided, then “Exception Report Type is defaulted to 1” is recorded in the job log. • If Exception Report Type is provided but is not a 1 or 2, then “Exception Report Type must be 1 or 2” is recorded in the job log. • If AMSEXPORT is not provided, then “The AMSEXPORT Parameter File cannot be empty” is recorded in the job log. • If AMSEXPORT is not a valid directory, then “The value entered in the AMSEXPORT parameter is not a valid directory” is recorded in the job log. • If AMSPARM is not provided, then “The AMSPARM Parameter File cannot be empty” is recorded in the job log. • If AMSPARM parameter is not a valid directory, then “The value entered in the AMSPARM parameter is not a valid

Process Steps	Messages
	<p>directory” is recorded in the job log.</p> <ul style="list-style-type: none"> • If Use Responsible Department is not provided then “Use Responsible Department is required.” is recorded in the job log. • If Use Responsible Department is provided but is not ‘Y’ or ‘N’ then “Use Responsible Department must be Y or N.” is recorded in job logs. • If Consolidation Option is not provided, then "Consolidation Option is required" is recorded in the job log. • If Consolidation Option is not 1, 2, or 3, then "Consolidation Option must be 1, 2, or 3" is recorded in the job log. • Parameter validation completed.
<p>2. Processing Debt Instrument Records</p>	<ul style="list-style-type: none"> • Start Schedule Detail record selection. • End Schedule Detail record selection. • Processing eligible schedule detail records. • Processing eligible Schedule Detail records completed. • Depending on the progression Counter size, '<<Progression Count>> Schedule Detail record(s) are processed' is displayed in the log. • Total <<TOTAL COUNT>> Schedule Detail record(s) processed. • Total <<IDADOCOUNT>> Internal Debt accounting transactions are created for Schedule Detail records. • Total <<REDOCCOUNT>> Receivable transaction(s) are created for Schedule Detail records. • Total <<GAXDOCCOUNT>> General Accounting transactions are created for Schedule Detail records. • Total <<PRCDOCCOUNT>> Payment Request transactions are created for Schedule Detail records.
<p>3. Processing Bypassed Records</p>	<ul style="list-style-type: none"> • Start Bypass record selection for generating Bypass Report • End Bypass record selection for generating Bypass Report • Processing the selected records. • Depending on the progression Counter size the '<<Progression Count>> Bypass Selection Record(s) report processed' is displayed in the log. • Total <<Bond Total Count>> Bond Bypass Selection Record(s) report processed. • Total <<Lease Total Count>> Lease Bypass Selection Record(s) report processed. • Total <<Loan Total Count>> Loan Bypass Selection Record(s) report processed. • Processing completed.

Restartability Information

This job step is implemented with checkpoints that begin after parameter validation. If the process fails for any reason (such as the network is down or the server is down), then the process can restart from the last point where it stopped.

If the job fails in any of the above steps after #1 - Parameter Validation; it can be restarted by resolving the errors. Any job failed during parameter validations would not be restarted. If the job is restarted, it will start from the step where it failed earlier and will not start from the beginning. For example, the job failed in the step Bypassed Records report due to some fatal condition (for example, table space error). If the job is restarted after resolving the table space issue, the job will start from the step Bypassed Records report and not from the selection and processing of Authorization/ Debt Instrument records.

Instead of restarting the job, if a new job is scheduled with the same set of parameters after resolving the table space issue, the job will start from the first step.

The restart will fail if another instance of this job has been scheduled and ran successfully before restarting the failed job.

Minor Input

Tables

- Application Parameters (APPCTRL / IN_APP_CTRL: APPL_SYS_DT)
- Calendar Date (CLDT / R_CLDT) – Current FY determined for Application Date
- Fiscal Year (FY R_FY) – Used to determine start and end dates of the current fiscal year

Major Input

Tables

- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Borrower Information (R_DEBT_BRWR)
- Borrower COA (R_DEBT_BRWRCTG)
- Lender Information (R_DEBT_LNDR)
- Lender COA (R_DEBT_LNDRCTG)
- Debt Type (DEBTTYPE / R_DEBT_TYPE)

Batch Parameters

Parameter	Description	Default Value
Export Directory (AMSEXPORT)	Required location where the XML file is written. If left blank the system default is used.	\$\$AMSROOT\$\$/ExportImport
Parameter Directory (AMSPARM)	Required location where the load and submit parameter files is written for later job steps. If left	\$\$AMSROOT\$\$/Parms

Parameter	Description	Default Value
	blank the system default is used.	
Chain Parameter File (CHAIN_PARM_FILE)	Required name identifying the common chain parameter file (.txt).	DebtPymtBilling.txt
Client Name (CLIENT_NM)	Optional client name for reports created.	No default
Commit Block Size (COMMIT_SIZE)	Required commit block size for performance tuning. If left blank, 1000 is assumed.	1000
Consolidation Option (CONS_OPT)	<p>Required. Consolidation Option determines whether transactions generated by the job are consolidated or not.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> • 1 - This option is for no consolidation, meaning each debt instrument is placed on a separate transaction. • 2 – This option consolidates by Authorization Debt ID. With this option all debt instruments for a given Authorization Debt ID are placed in a single transaction. • 3 – This option consolidates by Vendor/Customer and Address Code, depending on the type of debt instrument. <p>Please see the Transaction Creation section in the Debt Payment & Billing Chain for more details on the options and the different types of debt instruments.</p>	1
Budget Fiscal Year (DOC_BFY)	Optional budget fiscal year to be populated on generated transactions. Enter as YYYY.	No default
Fiscal Year (DOC_FY)	Conditionally required fiscal year to be populated on generated transactions when the current year is not desired. Required when the DOC_PER parameter is entered. Enter as YYYY.	No default

Parameter	Description	Default Value
Period (DOC_PER)	Conditionally required accounting period to be populated on generated transactions when the current period is not desired. Required when the SEL_DT is in the prior year.	No default
Record Date (DOC_REC_DT)	Optional transaction record date to be populated on generated transactions when the current application date is not desired. Enter as MM/DD/YYYY.	No default
Exception Report Type (EXCP_RPT_TYP)	Required Exception Report Type (1=Detailed, 2=Summarized, if not entered then defaulted to Detailed)	1
ABS Payment Transaction Code (GAX_DOC_CD)	Required ABS payment transaction code used when a Purchase Order transaction did not reserve funds.	GAX
ABS Department (GAX_DEPT_CD)	Required department code used in the creation of ABS transactions.	No default
ABS Unit (GAX_UNIT_CD)	Optional unit code used in the creation of ABS transactions.	No default
ABS Prefix (GAX_DOC_PFX)	Optional prefix used in the generation of transaction IDs for ABS transactions.	No default
Internal Transaction Code (IDA_DOC_CD)	Required IET transaction code to be used on internal loans.	IDA
Internal Department (IDA_DEPT_CD)	Required department code used in the creation of IET transactions.	No default
Internal Unit (IDA_UNIT_CD)	Optional unit code used in the creation of IET transactions.	No default
Internal Prefix (IDA_DOC_PFX)	Optional prefix used in the generation of transaction IDs for IET transactions.	No default
PR Payment Transaction Code (PRC_DOC_CD)	Required PR payment transaction code used when a Purchase Order transaction reserved funds for a	PRC

Parameter	Description	Default Value
	lease.	
PR Department (PRC_DEPT_CD)	Required department code used in the creation of PRC transactions.	No default
PR Unit (PRC_UNIT_CD)	Optional unit code used in the creation of PRC transactions.	No default
PR Prefix (PRC_DOC_PFX)	Optional prefix used in the generation of transaction IDs for PRC transactions.	No default
Progression Counter Size (PROG_CTR_SIZE)	Required Progression Counter to control informational messages about processing throughput.	1000
RE Transaction Code (RE_DOC_CD)	Required RE transaction code used for external billings.	RE
RE Department (RE_DEPT_CD)	Required department code used in the creation of RE transactions.	No default
RE Unit (RE_UNIT_CD)	Optional unit code used in the creation of RE transactions.	No default
RE Prefix (RE_DOC_PFX)	Optional prefix used in the generation of transaction IDs for RE transactions.	No default
Selection Date (SEL_DT)	Optional parameter for schedule detail record selection when the application date is not desired. Enter as MM/DD/YYYY.	No default
Major Type of Debt (TYP_OF_DEBT)	Required Type of Debt for selection: 1 – Bonds only, 2 – Leases only, 3 – Loans only, and 4 – All Types.	4
Use Responsible Department (USE_RESP_DEPT)	Required Use Responsible Department parameter which determines whether Responsible Department is used or not as Transaction Department Code instead of the individual transaction code parameters. Valid values are Y (yes) and N (no).	N

Major Output

- BondDocuments.xml (XML file for Bonds transactions)
- LeaseDocuments.xml (XML file for Lease transactions)
- LoanDocuments.xml (XML file for Loan transactions)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Debt Payment Billing Bypass Records Report
- DebtPymtBilling.txt

Batch Job Return Codes

The following table shows the potential job return codes for the Debt Payment & Billing job.

Return Code	Condition
Successful (1)	All of the selected records are processed successfully.
Warning (4)	No eligible records found.
Non-Fatal Error (8)	N/A
Failed (12)	<p>The job will fail under the following conditions:</p> <ul style="list-style-type: none"> • Parameters are invalid. • Run time exceptions for unexpected situations. <p>When this job ends with a return of code Failed, subsequent jobs in the chain is set to inactive.</p>
Terminated (16)	<p>This return code is issued when the job is terminated by the user. When this job ends with a return code of Terminated, subsequent jobs in the chain is set to inactive.</p>
System Failure (20)	<p>This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.</p>

Sort Sequence

Processing Debt Instrument Records

Major Type of Debt, Debt Instrument ID, Schedule Number, Schedule Line

Bypassed Records Report

Major Type of Debt, Debt Instrument ID

Selection Criteria

Processing Debt Instrument Records

- Major Type of Debt batch parameter matches the Major Type of Debt for a Debt Instrument or the batch parameter is *All Types and*

- Manual Payments/Billing flag on the parent Schedule record is *unchecked* and
- Payment Billing Chain Reported flag on the Schedule record is *blank* and
- Scheduled Date of Schedule Detail record <= Selection Date Parameter and
 - Processed On Date of Schedule Detail record is *blank* and
 - Schedule Detail Type is *Down Payment, Regular Payment, Purchase Payment, or Renewal Penalty Payment* and
 - One of the following amount fields is <> \$0.00: Principal, Interest, Other Amount 1, Other Amount 2, Other Amount 3, Other Amount 4, or Other Amount 5
- One or more of the following is done depending on the Major Type of Debt batch parameter:
 - Loans
 - Application/Loan Indicator is *Loan* and
 - Debt Instrument Status is *Active Loan* and
 - At least one of the following is true:
 - Bill Principal flag on Schedule is checked and the Principal amount of Schedule Detail is <> \$0.00
 - Bill Interest flag on Schedule is checked and the Interest amount of Schedule Detail is <> \$0.00
 - Leases
 - Debt Instrument Status is *Active Lease*
 - Bonds
 - Debt Instrument Status is *Active Bond*

Bypassed Records Report

- Not Using Automated Accounting
 - Manual Payments/Billing flag is *checked*
- No Amounts to Pay or Bill
 - All amount fields are *\$0.00*
 - Processed On date field is not *blank*
- Payment/Billing Suppressed for Principal or Interest
 - Debt Instrument's Major Type of Debt = *Loan* and at least one of the following is true:
 - Bill Principal flag is *unchecked* and the Principal amount of Schedule Detail is <> *\$0.00* or
 - Bill Interest flag is *unchecked* and the Interest amount of Schedule Detail is <> *\$0.00*

Problem Resolution

The following table shows the possible return codes and recommendations for each processing step.

Step 1: Parameter Validation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	Successful	N/A	N/A
Warning (4)	This step does not issue this return code.	N/A	N/A
Non-Fatal Error (8)	This step does not issue this return code.	N/A	N/A
Failed (12)	Required Parameters are not entered. Sample Message: Department Code is Required.	Schedule a new job by passing required and valid parameter values.	N/A
	Failed because of runtime exceptions for an unexpected situation.	The reason for the failure needs to be investigated before scheduling a new job.	N/A
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated before scheduling a new job.	N/A
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated and resolved before scheduling a new job.	N/A

Step 2: Processing Debt Instrument Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All of the selected records are processed successfully.	N/A	N/A
Warning (4)	No eligible records were found on the tables for processing.	N/A	N/A
Non-Fatal Error (8)	This step does not issue this return code.	N/A	N/A
Failed (12)	Job failed due to Fatal conditions.	In this step, the job can fail under the following two conditions:	Schedule a new job or restart the job.

Possible Return Codes	Condition	Recommendation	Other Instructions
		<ul style="list-style-type: none"> Encounters any runtime exceptions Failed during restart. <p>If the job fails because of the runtime exceptions, investigate the exception reported by the process, resolve the error and restart the job.</p>	
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues	The reason for the System Failure needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Step 3: Processing Bypassed Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	The Bypassed Records report generated successfully.	N/A	N/A
Warning (4)	This step does not issue this return code.	N/A	N/A
Non-Fatal Error (8)	This error occurs if some of the processed records are written to the Bypassed Records Report because they exceed the max line limit defined on DCREQ.	N/A	N/A

Failed (12)	Failed due to issues in creating the report.	Investigate and fix the reason that the report was not created before restarting the chain.	N/A
	Failed because of runtime exceptions for an unexpected situation.	Investigate and fix the reason the report was not created before restarting the chain.	N/A

Debt Payment & Billing Chain: Load & Submit Transactions

Job Name	Load & Submit Transactions
Recommended Frequency	See chain job
Single Instance Required	Yes
Can the job be restarted?	Yes. Please see the “Problem Resolution” section for details.
Reports generated	No

Overview

This job starts by first validating the batch parameters. If the parameters are valid, then it loads the records from the XML file(s) generated by the Debt Payment & Billing job into the Transaction Catalog. This job uses the MultiProcessImport feature to load and submit the transactions created in the XML file from the first job step. If the parameters are not valid, the job issues appropriate messages and ends with a status *Failed*.

Major Input

- BondDocuments.xml
- LeaseDocuments.xml
- LoanDocuments.xml

Process Steps	Messages
1. Parameter Validation	<ul style="list-style-type: none"> • Validating Batch Parameters. • Each valid parameter is listed followed by any value If the Thread Count is not a valid integer then “Invalid value received for parameter THREAD_COUNT (expected number): ##” is recorded in the job log. • If the Thread Count is not a valid integer > 0, then “The valid job thread count starts with 1. Receive value: ##” is recorded in the job log. • If the Mode is not provided then “MODE parameter cannot be left blank (expected values 1, 2, or 3)” is recorded in the job log. • If the Mode is provided and mode is not => 1 and not

Process Steps	Messages
	<p>=< 3 then “Invalid value received for parameter MODE (expected values 1, 2, or 3): ##” is recorded in the job log.</p> <ul style="list-style-type: none"> • If the Commit Block Size is not a valid integer > 1 then “Invalid value received for parameter COMMIT_BLOCK_SIZE (expected value >1): ##” is recorded in the job log. • If the Block Size is not a valid integer > 1 then “Invalid value received for parameter BLOCK_SIZE (expected value >1): ##” is recorded in the job log. • If the Polling Frequency is a valid integer and < 5 then “Invalid value received for parameter SLEEP_INTERVAL (expected value >=5): ##” is recorded in the job log. • If the Logging Frequency is a valid integer and less than 30 then “Invalid value received for parameter LOG_STATUS_INTERVAL (expected value >= 30): ##” is recorded in the job log. • If the Catalog ID of the System Maintenance Utility job is not a valid integer greater than one then “Invalid value received for parameter SMU_CTLG_ID (expected value >1): ##” is recorded in the job log. • If the Other Action is not provided and run mode is 3, then “Other Action is required when run on mode 3” is recorded in the job log. • If the Other Action is provided and run mode is 1 or 2 then “Other Action is valid only for Mode 3” is recorded in the job log. • If the location of the source file of records is not a valid directory, then “Invalid value read for parameter FILE_INPUT_DIR (expected value = a valid directory): #####” is recorded in the job log. • If the Stagger Time is not a valid integer > 1 then “Invalid value received for parameter STAGGER_TIME (expected value >1): ##” is recorded in the job log. • If the Comma Separated list of input XML files is not provided then “No input file to process” is recorded in job log. • If the Comma Separated list of input XML files is provided and a file does not exist or does not end with xml then “Invalid / non existing file input part in value for parameter FILE_LIST (expected value = a valid list if file):#####” is recorded in job log. • If the Output Location for the file segments is not a valid directory then “Invalid value read for parameter FILE_OUTPUT_DIR (expected value = a valid directory): #####” is recorded in the job log. • Parameter validation completed.
2. Multiple Job	<ul style="list-style-type: none"> • Setting up job for parameter file: (Parameter Location

Process Steps	Messages
Processing	<p>path)\Parm_#####_#.txt</p> <ul style="list-style-type: none"> • Enabled job with Id=##### • Created Job ##### for Parm file (Export Import directory path)\Parm_#####_#.txt • (Repeated for each file and job combination) • Committed child jobs • Child job pending count:# Job Id[#####] Status=X (Repeated for each job) • Deleting part exception file: (Export Import directory path)\FailedDebtDocExcepReport_#####_#.txt • (Repeated for each file) • Deleting split input XML file: (Export Import directory path)\BondsDocuments_#####_#.xml, LeasesDocuments_#####_#.xml, LoanDocuments_#####_#.xml • (Repeated for each file) • Run Ended

Batch Parameters

Parameter	Description	Default Value
XML Transaction Limit (BLOCK_SIZE)	Optional block size for the number of transactions to be split out into files. If left blank, 1 is the default. Set this performance parameter to a value that will split an XML file into individual files sufficient for timely processing.	1
Commit Block Size (COMMIT_BLOCK_SIZE)	Optional number of records to commit at a time. If left blank, the ADV30Parms.ini file will supply a value.	10
Input File Directory (FILE_INPUT_DIR)	Required location of the source file of records.	\$\$AMSROOT\$\$/ExportImp ort/PaymentBilling
Input File Listing (FILE_LIST)	Required comma separated list of input XML files to load.	BondDocuments.xml, LeaseDocuments.xml, LoanDocuments.xml
Output File Directory (FILE_OUTPUT_DIR)	Required output location for the file segments.	\$\$AMSROOT\$\$/ExportImp ort/PaymentBilling
File Prefix (FILE_PREFIX)	Optional file prefix for Parameter and Data Files created by jobs.	No default
Apply Overrides at Import (I_SMU_APPLY_OV)	Required System Maintenance Utility flag to indicate Apply Overrides in Import Mode.	true

ERRIDES)		
Bypass Approvals at Import (I_SMU_BYPASS_APPROVAL)	Required System Maintenance Utility flag to indicate Bypass Approvals in Import Mode.	false
Bypass ADNT at Import (I_SMU_BYPS_ADNT_FL)	Required System Maintenance Utility flag to indicate Bypass ADNT in Import Mode.	true
Import Status (I_SMU_DOC_STATUS_CD)	Required System Maintenance Utility Transaction Status for Import Mode.	2
Override Level at Import (I_SMU_OVERRIDE_LVL)	Optional System Maintenance Utility Override Level for Import Mode. If 0 or left blank and the Apply Overrides parameter is <i>true</i> then the level of the user executing the chain job is used.	No default
Restart Indication at Import (I_SMU_RESTART_FL)	Required System Maintenance Utility flag to indicate Save Restart info in Import Mode.	true
Logging Frequency (LOG_STATUS_INTERVAL)	Required logging frequency (in seconds) for controller thread reporting status of child threads to the system log.	300
SMU Mode (MODE)	Required mode (1 = Import only, 2 = Import & Submit, 3 = Import, Other Action, and Submit).	2
Polling Frequency (SLEEP_INTERVAL)	Required polling frequency (in seconds) for internal controller thread for checking child processes.	5
SMU Catalog ID (SMU_CTLG_ID)	Required Catalog ID of the System Maintenance Utility job that is spawned as the child process.	3
Lag Time (STAGGER_TIME)	Required lag time in seconds between the spawning of each child process.	30
Apply Overrides at Submit (S_SMU_APPLY_OVERRIDE)	Required System Maintenance Utility flag to indicate Apply Overrides in Submit Mode.	true
Bypass Approval at Submit (S_SMU_BYPASS_APPROVAL)	Required System Maintenance Utility flag to indicate Bypass Approvals in Submit Mode.	false
Exception Report File Name (S_SMU_EXCEP_R	Required System Maintenance Utility Exception File for Submit Mode.	FailedDebtDocExceptionReport.txt

EP_FILE_NM)		
Exception Report Indication (S_SMU_EXCEP_R EP_IND)	Required System Maintenance Utility Exception Report Indicator for Submit Mode. Values are:1 = Detailed, 2 = Failed Transactions, 3 = Processed Transactions, 4 = Failed Transaction Lines, and 5 = Transaction Status.	4
Submit Severity Flag (S_SMU_EXP_SEV _FL)	Optional System Maintenance Utility flag to indicate the Severity Flag in Submit Mode.	1
Override Level at Submit (S_SMU_OVERRID E_LVL)	System Maintenance Utility Override Level for Submit Mode. If 0 or left blank and the Apply Overrides parameter is <i>true</i> then the level of the user executing the chain job is used.	
Restart Indication at Submit (S_SMU_RESTART _FL)	Required System Maintenance Utility to indicate Save Restart info in Submit Mode.	true
Number of Jobs (THREAD_COUNT)	Required number of jobs to start.	1

Major Output

- The result of this job is the loading of transaction records from the input file. Files are first split and then imported.
- During job processing there are two categories of temporary files (they are deleted upon successful job completion):
 - 1.) Split input files
 - 2.) Exception report files for each child job.
- If any of the child jobs encounter an exception, an appropriate exception message is merged into the Exception Report file for the job (specified by name in the job parameters).
- A parameter file is generated for each split XML file, and then the spawned jobs read those input parameter files in a sequential order.

Batch Job Return Codes

The following table shows the potential job return codes for Load & Submit Transactions.

Return Code	Condition
Successful (1)	All of the records are loaded into the Transaction Catalog successfully or the input files are empty. All of the transactions loaded were submitted successfully.
Warning (4)	This return code is issued when some of the records failed to load where all other records were loaded successfully.
Non-Fatal Error (8)	None of the records get loaded into the Transaction Catalog.
Failed (12)	<ul style="list-style-type: none"> • Parameters are invalid

	<ul style="list-style-type: none"> • When the input file is not found in the specified directory • Restart failed because another instance of the Debt Payment & Billing Chain has already been run successfully • Runtime exceptions encountered for any unexpected situations <p>When the job ends with a return code of Failed, subsequent jobs in the chain is set to inactive.</p>
Terminated (16)	This return code is issued when the job is terminated by the user. When the job ends with a return code of Terminated, subsequent jobs in the chain is set to inactive.
System Failure (20)	This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.

Sort Sequence

N/A

Selection Criteria

The input record files (specified in the Job Parameter) are selected.

Problem Resolution

If the process fails for any reason, the Multi Threaded Transaction Loader job supports restart functionality. Upon restarting the Multi Threaded Transaction Loader job, the failed job is picked up and run. A checkpoint is maintained for the overall Multi Threaded Transaction Loader job as well as the individual child jobs to identify how far the job successfully executed before failing. Therefore, when the user restarts the failed job the system does not start from the first step of the Multi Threaded Transaction Loader but instead starts processing from the exact point at which it failed.

For example, let's assume that the failed job split the input file in to five child jobs and that the third and the fourth child jobs failed. When restarted only those failed child jobs, that is, the third and the fourth ones are picked up and processed. The restarted job would not process child jobs one, two or three given they have already completed successfully in the earlier run.

The following table shows the possible return codes and recommendations for each processing step specific to the job in the chain. For general errors and recommendations, refer to the SMU Transaction Upload run sheet in the *CGI Advantage Financial – Utilities Run Sheet Guide*.

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All transactions were loaded and submitted.	N/A	N/A
Warning (4)	This return code is issued when the job fails to load some of the transactions. Sample Message: Unable to load all of the	Analyze the reason why records failed to load to the Transaction Catalog. When the current run is a re-execution of a	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted –

Possible Return Codes	Condition	Recommendation	Other Instructions
	transactions into the catalog.	previous run (the same input file is used in a new job) this error may be seen because the records that previously loaded successfully will not load again (duplicate entry on the Transaction Catalog is not allowed). If the records failed to load to the Transaction Catalog due to any other reason, then analyze the reason, resolve it and schedule a new job.	only a new job should be scheduled.
Non-Fatal Error (8)	This return code is issued when the job failed to load all of the transactions.	Correct what is most likely a setup issue and restart the spawned SMU job and then restart the load/submit job.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
Failed (12)	In this step, the job can fail under the following conditions: <ul style="list-style-type: none"> • Issues in spawning jobs • Files not found • Runtime exceptions • Parameter Edits 	The reason for the failure needs to be investigated and fixed before restarting the job.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated and fixed before restarting the chain.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated before restarting the chain	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Debt Payment & Billing Chain: Generate Exception Report

Job Name	Generate Exception Report
Recommended Frequency	See chain job
Single Instance Required	Yes
Can be restarted?	No
Report Generated	Yes. <ul style="list-style-type: none"> • Debt Payment Billing Detail Exception Report or • Debt Payment Billing Summary Exception Report

Overview

The final job in the Debt Payment & Billing Chain generates an exception report that lists all of the transactions that did not submit to the *Final* Transaction Phase. When run in the detail mode the errors are also listed for each Receivable (RE), Internal Debt Accounting (IDA), General Accounting Expense/Expenditure (GAX) and Payment Request (PRC) transaction from earlier submit job steps with reference to a line within the transaction.

Major Input

- FailedDebtDocExcepReport.txt
- DebtPymtBilling.txt

Batch Parameters

Parameter	Description	Default Value
Parameter Directory (AMSPARM)	Required Parameter Location for Generate Exception Report Job	\$\$AMSROOT\$\$/Parms
Chain Parameter File Name (CHAIN_PARM_FILE)	Required Common Chain Parameters File (.txt)	DebtPymtBilling.txt
Exception Report File Name (EXCP_REP_FILE_NM)	Required Exception Report File Names	FailedDebtDocExcepReport.txt
Exception Report File Location (EXCP_PARM_FILE_LOC)	Required Exception Parameter File Location for Generate Exception Report Job	\$\$AMSROOT\$\$/ExportImport/PaymentBilling

Major Output

- Debt Payment Billing Detail Exception Report when Exception Report Type is 1 (Detailed) in the first job of the Debt Payment & Billing Chain job.
- Debt Payment Billing Summary Exception Report when Exception Report Type is 2 (Summary) in the first job of the Debt Payment & Billing Chain job.

Batch Job Return Codes

The following table shows the potential job return codes for the individual Generate Exception Report.

Return Code	Condition
Successful (1)	All of the validations are performed successfully and there are no records eligible for exception.
Warning (4)	Not applicable for this job.
Non-Fatal Error (8)	At least one RE or IDA or GAX or PRC transaction failed to submit to the <i>Final</i> Phase.
Failed (12)	<ul style="list-style-type: none"> • Input parameter file is not found. • Runtime exceptions encountered for any unexpected situations. • Technical failure. When the job ends with a return code of failed, subsequent jobs in the chain is set to inactive.
Terminated (16)	This return code is issued when the job is terminated by the user. When the job ends with a return code of Terminated, subsequent jobs in the chain is set to inactive.
System Failure (20)	This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.

Sort Sequence

N/A

Selection Criteria

N/A

Problem Resolution

Job cannot be restarted in this step. If the job fails a new job should be scheduled after correcting the errors that caused the job to fail.

The following table shows the possible return codes and recommendations for each processing step.

Step 1: Batch Parameter Validation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All batch parameter validations are successful (that is, there are no errors raised during parameter validations.)	N/A	N/A
Warning (4)	N/A	This step does not issue this return code.	N/A
Non-Fatal Error (8)	N/A	This step does not issue this return code.	N/A
Failed (12)	Required parameters are not entered. Sample Message: Parameter file name is not specified.	Enter missing required parameters and schedule a new job. Enter the parameter file name.	N/A
	Entered Parameters are not valid Sample Message: System Assurance Report Type in Transaction Submit section not found in the parameter file.	Enter valid parameters and schedule a new job. Ensure that a valid System Assurance Report type section exists in the parameter file.	N/A
	Failed because of runtime exceptions caused by unexpected conditions.	Failure reason needs to be investigated before rescheduling the job.	N/A
Terminated (16)	Job is terminated manually by the user.	A new job can be scheduled.	N/A
System Failure (20)	Job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated. A new job can be scheduled.	N/A

Step 2: Exception Report Generation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All RE or IDA or GAX or PRC transactions submitted to the <i>Final</i> transaction phase and the exception report was generated successfully.	N/A.	N/A
Warning (4)	N/A	This step does not issue this return code.	N/A
Non-Fatal Error (8)	At least one RE or IDA or GAX or PRC failed to submit to the <i>Final</i> transaction phase.	N/A	N/A

Failed (12)	Failed because of runtime exceptions caused by unexpected conditions.	Failure reason needs to be investigated before rescheduling the job.	N/A
Terminated (16)	Job is terminated manually by the user.	A new job can be scheduled.	N/A
System Failure (20)	Job is terminated because of database server or Network issues.	The reason for the System Failure needs to be investigated. A new job can be scheduled.	N/A

2.1.2 Initial Debt Accounting

Chain or Job Name	Initial Debt Accounting
Recommended Frequency	Nightly is recommended or on another frequent basis.
Single Instance Required	Yes
Can be restarted?	Yes
Reports generated	Yes <ol style="list-style-type: none"> 1. Initial Accounting Bypassed Records 2. Initial Accounting Detail or Summary Exceptions

Overview

The Initial Debt Accounting chain has the following jobs. Even though these jobs in the chain can be run individually by disabling other jobs, it is recommended to always run the entire chain.

1. [Initial Debt Accounting](#)
2. [Load & Submit Transactions](#)
3. [Generate Exception Report](#)

The Initial Debt Accounting Chain in CGI Advantage Financial is a group of jobs that work together to create accounting transactions that record the initial accounting for debt authorizations and debt instruments. When authorizations and instruments are set up and activated users have a choice to record the initial accounting manually or allow this chain job to record the accounting.

A special note for record selection pertains to the timeframe where debt records are being entered in the current year that should really be recorded in the prior year. In that timeframe there should be two instances of the chain run. The first should be run with the Fiscal Year selection parameter set to the prior year. Other optional parameters should also be used: accounting period (for example, 12, 13, and so forth) and the Budget Fiscal Year should be the prior year as well. The first run should be followed by one with Fiscal Year, Accounting Period, and Budget Fiscal Year blank or values in the new year specified.

Recording initial accounting for authorizations is optional and may not be used for any or only a subset of the Major Types of Debt: Loans, Leases, and Bonds. Setup on the Debt Type (DEBTYPE) page controls whether authorization accounting is available through the entry of an Authorization Accounting Event Type. When available, users still have the choice of suppressing initial accounting on an individual authorization.

Recording initial accounting for debt instruments is a requirement whether the Initial Debt Accounting Chain is used or the accounting is recorded manually. Using the chain job is the recommended approach because it enables other chain jobs within Debt Management to make accounting adjustments over the life of a debt instrument. Two or more event types on the Debt Type page control the initial accounting performed.

Not every record selected will result in transaction creation. Some records are updated by the batch program without creating a transaction. These are listed in the Initial Accounting Bypassed Records report. Selection logic for that report is later in this run sheet. Presented first is the selection logic for transaction generation. Please note that the chain job will not update records selected for transaction creation. Instead those transactions created will update the authorization or debt instrument record when processed to *Final*.

Debt Authorizations

Records selected for processing from the Loan Authorization Registry (LNAUTH), Lease Authorization Registry (LSAUTH), and Bond Authorization Registry (BDAUTH) are those where the following conditions are met:

- Major Type of Debt matches the Type of Debt batch parameter, and
- Generate Authorization Accounting flag is *checked*, and
- Initial Accounting Generated Date is *blank*, and
- Initial Accounting Reported flag (hidden field) is *unchecked*, and
- Authorization Status is *Ready to Exercise* or *Active* or *Locked*, and
- Authorized Amount greater than \$0.00, and
- Authorization Start Date is:
 - Greater than or equal to the Start Date of the Selection FY batch parameter, and
 - Less than or equal to the End Date of the Selection Fiscal Year.

When each of the above is met, the chain creates the Debt Accounting (DA) transaction for a selected authorization record and creates an accounting line for each Authorization COA record with a percentage greater than 0%. Descriptive information about the authorization is placed on the Header of the transaction for later recognition.

Debt Instruments

Records selected for processing from the Loan Registry (LOAN), Lease Registry (LEASE), and Bond Registry (BOND) are those where the follow conditions are met:

- Major Type of Debt matches the Major Type of Debt batch parameter, and
- Record Initial Accounting flag is checked, and
- Initial Accounting Recorded Date is *blank*, and
- Initial Accounting Reported flag (hidden field) is unchecked, and
- Schedule Start Date is:
 - Greater than or equal to the Start Date of the Selection FY batch parameter, and
 - Less than or equal to the End Date of the Selection FY

One or more of the following is done depending on the Major Type of Debt batch parameter:

- Loans
 - The Application/Loan Indicator is *Loan*
 - Debt Instrument Status is *Active Loan*
- Leases
 - Debt Instrument Status is *Active Lease*
 - Major Type of Lease is *Capital*
- Bonds
 - Debt Instrument Status is *Active Bond*

When a debt instrument record is selected, the process will create one or more transactions based on settings inferred to the debt instrument from the selected Debt Type associated with the instrument. Each transaction created will have at least two accounting lines and sometimes more depending on how the debt instrument was set up. Descriptive information about the debt instrument is placed on the Header and accounting lines for later recognition. The descriptive information on the accounting line is written to the Accounting Journal for reporting purposes.

Loans:

- Debt Accounting (DA) transaction when the Major Type of Loan is *External Given (EG)* or *External Taken (ET)*.
- Internal Debt Accounting (IDA) transaction when the Major Type of Loan is *Internal Loan (IG)*.
- Payout transaction (GAX) when the Major Type of Loan is *External Given* and the Debt Type associated with the Loan has a value for the Principal Payout Event Type.

Leases:

- Debt Accounting (DA) transaction

Bonds:

- Debt Accounting (DA) transaction

The Initial Debt Accounting process includes two reports. The first report is an Initial Accounting Bypassed Records report to list all selected authorization and debt instrument records that were either set up to bypass initial accounting or had settings that caused the record to be skipped. The report has several sections that list records under a reason description for why the record was not selected.

When the bypassed reason is 'Not Using Automated Accounting', the system will directly update the Initial Accounting Reported flag on the selected schedule. This update prevents later runs of the chain from having to re-evaluate the record and continue to list it in the report.

The second report, the Transaction Exception Report, will list any Debt Accounting (DA), Internal Debt Accounting (IDA) transaction, or Payout transaction (GAX) that failed to submit to *Final* Transaction Phase through an SMU job.

Major Input

- Authorization Registry (BDAUTH, LNAUTH, LSAUTH / R_DEBT_AUTH)
- Authorization COA (R_DEBT_AUTHACTG)
- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Borrower Information (R_DEBT_BRWR)
- Borrower COA (R_DEBT_BRWRACTG)
- Lender Information (R_DEBT_LNDR)
- Lender COA (R_DEBT_LNDRACTG)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Debt Type (DEBTTYPE / R_DEBT_TYPE)

Major Output

- Debt Accounting transaction (DA)
- Internal Debt Accounting transaction (IDA)
- Payout transaction (GAX)
- Initial Accounting Bypassed Records Report
- Initial Accounting Detail Exception or Initial Accounting Summary Exception Report
- Authorization Registry (BDAUTH, LNAUTH, LSAUTH / R_DEBT_AUTH)
- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)

Chain Job Return Codes

The following table shows the potential Return Codes for the Initial Debt Accounting chain job. Note that the chain job will end with the highest Return Code across all of the jobs.

Return Code	Condition
Successful (1)	All of the jobs end successfully.
Warning (4)	One of the jobs in the chain ends with a Return Code of Warning.
Non-Fatal Error (8)	One of the jobs in the chain ends with a Return Code of Non-Fatal Error.
Failed (12)	One of the jobs in the chain ends with a Return Code of Failed.
Terminated (16)	One of the jobs in the chain ends with a Return Code of Terminated.
System Failure (20)	One of the jobs in the chain ends with a Return Code of System Failure.

Problem Resolution

If any of the jobs in the chain failed due to application errors it is advisable to restart the job (when possible) after correcting the errors instead of rescheduling the job. Restarting the job will reduce the processing time since the job will resume from where it has last committed and select only the unprocessed records. When restarting is not an option, the entire chain can be run again.

Please refer to the individual jobs for details regarding the specific job processes and problem resolution.

Initial Debt Accounting Chain: Initial Debt Accounting

Job Name	Initial Debt Accounting
Recommended Frequency	See chain job
Single Instance Required	Yes.
Can be restarted?	Yes. See the overview and the Problem Resolution section for more details.
Reports Generated	Initial Accounting Bypassed Records Report

Overview

This first job in the chain performs all record selection, XML file generation, and generates a report of records that did not result in a transaction being created.

This job step consists of following basic steps:

1. **Parameter Validation:** In this step, the process will verify the parameters. If the parameter validation is successful, the job will go to the next step. Otherwise, the job will end with a Return Code of 'Failed'.
2. **Processing Debt Authorization Records:** In this step this job will read the Debt Registry table and select records based on criteria described on the chain job part of this run sheet. Some records will result in a direct update, others are queued up for transaction creation. This step then generates an XML file with Debt Accounting (DA) transactions with Header and Accounting Line details. There is one DA created for each authorization. Although not likely invoked, transaction size is governed by a MAX_LINE_LIMIT record for CH_DOC_ACTG on the Transaction Required Components (DCREQ) page in the Administration application.
3. **Processing Debt Instrument Records:** In this step this job will create one or more of the following transactions: Debt Accounting (DA), Internal Debt Accounting (IDA), and Payment (GAX) transactions based on criteria described in the chain job part of this run sheet. This step then generates an XML file with those transactions with Header, Vendor line, and Accounting line details. There is a separate transaction for each debt instrument. Although not likely invoked, transaction size is governed by MAX_LINE_LIMIT records for CH_DOC_ACTG, GAX_DOC_ACTG, IET_DOC_VEND, and IET_DOC_VEND on the Transaction Required Components (DCREQ) page in the Administration application. When a limit is reached, the step will start a second transaction for the debt instrument.
4. **Processing Bypassed Records:** This last step creates the Initial Accounting Bypassed Records Report and updates certain records to prevent future selection. (Please see details of this in the chain job section of the run sheet).

Process Steps	Messages
1. Parameter Validation	<ul style="list-style-type: none"> • Validating Batch Parameters. • Each valid parameter is listed followed by any value. <ul style="list-style-type: none"> • If Type of Debt is not provided, then "Type of Debt is required" is recorded in the job log. • If Type of Debt is provided but is not equal to 1 or 2 or 3 or 4, then "Invalid value for Type of Debt" is recorded

Process Steps	Messages
	<p>in the job log.</p> <ul style="list-style-type: none"> • If Record Date is provided and is not valid on Calendar Date (CLDT), then “Record Date is not valid on CLDT” is recorded in the job log. • If Record Date is provided but not in the correct format (mm/dd/yyyy), then “Record Date not in correct format mm/dd/yy” is recorded in the job log. • If Fiscal Year is provided but is not valid on Fiscal Year (FY), then “Fiscal Year is not valid on FY” is recorded in the job log. • If Fiscal Year is provided but is not in the correct format (yyyy), then “Fiscal Year is not in correct format yyyy” is recorded in the job log. • If Accounting Period is not provided but the Fiscal Year parameter is provided and the Fiscal Year parameter is a prior Fiscal Year, then “Accounting Period is required” is recorded in the job log. • If the Accounting Period parameter is provided and is not valid on Accounting Period (APD), then “Accounting Period is not valid on APD” is recorded in the job log. • If Budget Fiscal Year is provided and is not valid on Fiscal Year (FY), then “Budget Fiscal Year is not valid on FY” is recorded in the job log. • If Debt Accounting transaction code is not provided, then “Debt Accounting transaction code is required” is recorded in the job log. • If Debt Accounting transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “Debt Accounting Transaction Code not valid and active on DCTRL for CH transaction type” is recorded in the job log. • If Internal Debt Accounting transaction code is not provided, then “Internal Debt Accounting transaction code is required” is recorded in the job log. • If Internal Debt Accounting transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “Internal Debt Accounting Transaction Code not valid and active on DCTRL for IET transaction type” is recorded in the job log. • If Payout Transaction Code is not provided, then “Payout Transaction Code is required” is recorded in the job log. • If Payout Transaction Code is provided but is not valid and active on DCTRL, then “Payout Transaction Code not valid on DCTRL for ABS transaction type and GAX transaction sub type” is recorded in the job log. • If Department code is not provided, then “Department code is required” is recorded in the job log.

Process Steps	Messages
	<ul style="list-style-type: none"> • If Department code is provided but is not valid and active on Department (DEPT), then “Department code must be valid and active on DEPT” is recorded in the job log. • If Transaction Unit Code is provided but is not valid and active on Unit (UNIT), then “Transaction Unit Code not valid and active on UNIT” is recorded in the job log. • If an Automatic Transaction Numbering (ADNT) record for the Debt Accounting Transaction Code, Transaction Department Code, and Debt Accounting Transaction Prefix cannot be found, then “ADNT entry not found for Debt Accounting Transaction Code” is recorded in the job log. • If an ADNT record for the Internal Debt Accounting Transaction Code, Transaction Department Code, and Internal Debt Accounting Transaction Prefix cannot be found on ADNT, then “ADNT entry not found for Internal Debt Accounting Transaction Code” is recorded in the job log. • If an ADNT entry for the Payout Transaction Code, Transaction Department Code, and Payout Transaction Prefix cannot be found on ADNT, then “ADNT entry not found for Payout Transaction Code” is recorded in the job log. • If Commit Size is not provided, then “‘Commit Size’ defaulted to 1000” is recorded in the job log. • If Commit Size is not a valid integer greater than zero, then “Commit Size must be a positive whole number greater than zero” is recorded in the job log. • If Progression Counter is not provided, then “Progression Counter defaulted to 1000” is recorded in the job log. • If Progression Counter is not valid integer greater than zero, then “Progression Counter must be a positive whole number greater than zero” is recorded in the job log. • If Exception Report Type is not provided, then “Exception Report Type is defaulted to 1” is recorded in the job log. • If ‘Exception Report Type’ is provided but is not a 1 or 2, then “Exception Report Type must be 1 or 2” is recorded in the job log. • If AMSEXPOR is not provided, then “The AMSEXPOR Parameter File cannot be empty” is recorded in the job log. • If AMSEXPOR is not valid directory, then “The value entered in the AMSEXPOR parameter is not a valid directory” is recorded in the job log. • If AMSPARM is not provided, then “The AMSPARM Parameter File cannot be empty” is recorded in the job log.

Process Steps	Messages
	<p>log.</p> <ul style="list-style-type: none"> • If AMSPARM parameter is not valid directory, then “The value entered in the AMSPARM parameter is not a valid directory” is recorded in the job log. • Parameter validation completed.
<p>2. Processing Debt Authorization Records</p>	<ul style="list-style-type: none"> • Start Authorization record selection. • End Authorization record selection. • Processing eligible Authorization Registry records. • Processing of Debt Authorization records completed. • Depending on progression Counter size the “<<Progression Count>> record(s) processed” is displayed in the log. • Total <<TOTAL COUNT>> Debt Authorization record(s) processed. • Total <<DOC COUNT>> Debt Accounting transactions are created for Debt Authorization records.
<p>3. Processing Debt Instrument Records</p>	<ul style="list-style-type: none"> • Start Debt Instrument record selection. • End Debt Instrument record selection. • Processing eligible Debt Instrument Registry records. • Processing eligible Debt Instrument Registry records completed. • Depending on the progression Counter size the “<<Progression Count>> record(s) processed” is displayed in log. • Total <<TOTAL COUNT>> Debt Instrument record(s) processed. • Total <<DADOCCOUNT>> Debt accounting transactions are created for Debt Instrument records. • Total <<IDADOCCOUNT>> Internal Debt accounting transactions are created for Debt Instrument records. • Total <<GAXDOCCOUNT>> Payment transactions are created for Debt Instrument records.
<p>4. Processing Bypassed Records</p>	<ul style="list-style-type: none"> • Selecting eligible records. • Selection of eligible records completed. • Processing the selected records. • Depending of progression Counter size the “<<Progression Count>> record(s) processed” is displayed in the log. • Total <<Bond Total Count>> Bond Bypass Selection Record(s) report processed. • Total <<Lease Total Count>> Lease Bypass Selection Record(s) report processed. • Total <<Loan Total Count>> Loan Bypass Selection Record(s) report processed. • Processing completed.

Restartability Information

This job step is implemented with checkpoints. If the process fails for any reason (such as the network is down or the server is down), then the process can restart from the last point where it stopped.

If the job fails in any of the above steps after #1 - Parameter Validation; it can be restarted by resolving the errors. Any job failed during parameter validations would not be restarted. If the job is restarted, it will start from the step where it failed earlier and won't start from the beginning. For example, the job failed in the step Bypassed Records report due to some fatal condition (for example, table space error). If the job is restarted after resolving the table space issue, the job will start from the step Bypassed Records report and not from the selection & processing of Authorization/ Debt Instrument records.

Instead of restarting the job, if a new job is scheduled with the same set of parameters after resolving the table space issue, the job will start from the first step.

The restart will fail if another instance of this job has been scheduled and ran successfully before restarting the failed job.

Minor Input

Tables

- Application Parameters (APPCTRL / IN_APP_CTRL for APPL_SYS_DT)
- Calendar Date (CLDT / R_CLDT) – Current FY determined for Application Date
- Fiscal Year (FY - R_FY) – Used to determine start and end dates of the current fiscal year or any year specified in the Fiscal Year parameter

Major Input

Tables

- Authorization Registry (BDAUTH, LNAUTH, LSAUTH / R_DEBT_AUTH)
- Authorization COA (R_DEBT_AUTHACTG)
- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Borrower (R_DEBT_BRWR)
- Borrower COA (R_DEBT_BRWRACTG)
- Lender Information (R_DEBT_LNDR)
- Lender COA (R_DEBT_LNDRACTG)
- Debt Type (DEBTTYPE / R_DEBT_TYPE) – Please note that there are many controls on this page that are used by this process and it should be reviewed in detail for all fields with 'Initial' in the label.

Batch Parameters

Parameter	Description	Default Value
Export Directory (AMSEXPORT)	Required location where the XML file is written. If left blank the system default is used.	\$\$AMSROOT\$\$/ExportImport
Parameter Directory (AMSPARM)	Required location where the load and submit parameter files is written for later job steps. If left blank the system default is used.	\$\$AMSROOT\$\$/Parms
Chain Parameter File Name (CHAIN_PARM_FILE)	Required name identifying the common chain parameter file (.txt).	InitialDebtAccounting.txt
Client Name (CLIENT_NM)	Optional client name for reports created.	No default
Commit Block Size (COMMIT_SIZE)	Required commit block size for performance tuning.	1000
Debt Accounting Transaction Code (DA_DOC_CD)	Required Debt Accounting transaction code.	DA
Debt Account Prefix (DA_DOC_PFX)	Optional Debt Accounting Transaction Prefix.	No default
Budget Fiscal Year (DOC_BFY)	BFY for transactions if the system should not default. Enter as YYYY. 9999 should never be entered as any COA used with that BFY will trigger 9999 to infer to the accounting line.	No default
Department (DOC_DEPT_CD)	Required Department used for all transactions created.	No default
Fiscal Year (DOC_FY)	Conditionally required Fiscal Year for selection of transactions when two years are open. Enter as YYYY. When entered the value is placed on transaction headers.	No default
Period (DOC_PER)	Conditionally required APD for transactions if the system default should not be used.	No default
Record Date (DOC_REC_DT)	Optional Transaction Record Date used when the defaulting Application Date is not desired.	No default
Unit (DOC_UNIT_CD)	Optional Unit code for all transactions.	No default

Exception Report Type (EXCP_RPT_TYP)	Required Exception Report Type (1=Detailed, 2=Summarized, if not entered then defaulted to Detailed).	1
Payout Transaction Code (GAX_DOC_CD)	Required Payout transaction code.	GAX
Payout Prefix (GAX_DOC_PFX)	Optional Payout Transaction Prefix.	No default
Internal Debt Accounting Transaction Code (IDA_DOC_CD)	Required Internal Debt Accounting transaction code.	IDA
Internal Debt Accounting Prefix (IDA_DOC_PFX)	Optional Internal Debt Accounting Transaction Prefix.	No default
Progression Counter Size (PROG_CTR_SIZE)	Required Progression Counter to control informational messages about processing throughput.	1000
Major Type of Debt (TYP_OF_DEBT)	Required Type of Debt for selection: 1 – Bonds only, 2 – Leases only, 3 – Loans only, and 4 – All Types.	4

Major Output

- BondDocuments.xml (XML file for Bond transactions)
- LeaseDocuments.xml (XML file for Lease transactions)
- LoanDocuments.xml (XML file for Loan transactions)
- Authorization Registry (BDAUTH, LNAUTH, LSAUTH / R_DEBT_AUTH)
- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Initial Accounting Bypassed Records Report
- InitialDebtAccounting.txt

Batch Job Return Codes

The following table shows the potential job Return Codes for the Initial Debt Accounting job.

Return Code	Condition
Successful (1)	All of the selected records are processed successfully.
Warning (4)	No eligible records found.
Non-Fatal Error (8)	N/A
Failed (12)	The job will fail under the following conditions:

Return Code	Condition
	<ul style="list-style-type: none"> Parameters are invalid. Run time exceptions for unexpected situations. <p>When this job ends with a Return Code of Failed, subsequent jobs in the chain is set to inactive.</p>
Terminated (16)	<p>This Return Code is issued when the job is terminated by the user. When this job ends with a Return Code of Terminated, subsequent jobs in the chain is set to inactive.</p>
System Failure (20)	<p>This Return Code is issued when the job is terminated because of database server or network issues. When this job ends with a Return Code of System Failure, subsequent jobs in the chain is set to Inactive.</p>

Sort Sequence

Processing Debt Authorization Records

Major Type of Debt, Authorization ID

Processing Debt instrument Records

Major Type of Debt, Debt Instrument ID

Bypassed Records Report

Major Type of Debt, Authorization Debt Instrument Indicator, Authorization ID, for Debt Authorization records

Major Type of Debt, Authorization Debt Instrument Indicator, Authorization ID, Debt Instrument ID for Debt Instrument records

Selection Criteria

Processing Debt Authorization Records

- Major Type of Debt matches the Type of Debt batch parameter, and
- Generate Authorization Accounting flag is checked, and
- Initial Accounting Generated Date is *blank*, and
- Initial Accounting Recorded flag is unchecked, and
- Authorization Status is *Ready to Exercise* or *Active* or *Locked*, and
- Authorized Amount greater than \$0.00, and
- Authorization Start Date is
 - Greater than or equal to Start Date of the Selection FY batch parameter, and
 - Less than equal to End Date of the Selection Fiscal Year.

Processing Debt instrument Records

- Major Type of Debt matches the Major Type of Debt batch parameter, and
- Record Initial Accounting flag is checked, and
- Initial Accounting Recorded Date is *blank*, and

- Initial Accounting Recorded flag is unchecked, and
- Schedule Start Date is
 - Greater than or equal to Start Date of the Selection FY batch parameter, and
 - Less than or equal to the End Date of the Selection FY.
- One or more of the following is done depending on the Major Type of Debt batch parameter:
 - Loans
 - The Application/Loan Indicator is Loan
 - Debt Instrument Status is Active Loan
 - Leases
 - Debt Instrument Status is *Active Lease*
 - Major Type of Lease is *Capital*
 - Bonds
 - Debt Instrument Status is *Active Bond*

Bypassed Records Report

Below conditions are for authorization records:

- The Initial Accounting Recorded flag is unchecked, and
- The Generate Authorization Accounting flag is not checked, or
- The Selection Fiscal Year is the current year and the Authorization Start Date is less than the Start Date of that Selection Fiscal Year (The Start Date is determined as 1 day after End Date of prior FY).

Below conditions are for Debt instrument records:

- The Initial Accounting Recorded flag is unchecked, and
- The Record Initial Accounting flag is not checked, or
- The Selection Fiscal Year is the current year and The Schedule Start Date is less than the Selection Fiscal Year Start Date.

Problem Resolution

The following table shows the possible Return Codes and recommendations for each processing step.

Step 1: Parameter Validation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	Successful	N/A	N/A
Warning (4)	This step does not issue this Return Code.	N/A	N/A

Possible Return Codes	Condition	Recommendation	Other Instructions
Non-Fatal Error (8)	This step does not issue this Return Code.	N/A	N/A
Failed (12)	Required Parameters are not entered. Sample Message: Department Code is Required.	Schedule a new job by passing required and valid parameter values.	N/A
	Failed because of runtime exceptions for an unexpected situation.	The reason for the failure needs to be investigated before scheduling a new job.	N/A
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated. Schedule a new job.	N/A
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated. Schedule a new job.	N/A

Step 2: Processing Debt Authorization Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All of the selected records are processed successfully	N/A	N/A
Warning (4)	No eligible records were found on the tables for processing.	Review selection parameters to verify they were correct.	N/A
Non-Fatal Error (8)	This step does not issue this Return Code.	N/A	N/A
Failed (12)	Job failed due to Fatal conditions.	In this step, the job can fail under the following two conditions. 1) Encounters any runtime exceptions and 2) Failed during restart. If the job fails because of the	Schedule a new job or restart this job.

Possible Return Codes	Condition	Recommendation	Other Instructions
		runtime exceptions, investigate the exception reported by the process, resolve the error and restart the job.	
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues	The reason for the System Failure needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Step 3: Processing Debt instrument Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All of the selected records are processed successfully.	N/A	N/A
Warning (4)	No eligible records were found on the tables for processing.	N/A	N/A
Non-Fatal Error (8)	This step does not issue this Return Code.	N/A	N/A
Failed (12)	Job failed due to Fatal conditions.	In this step, the job can fail under the following two conditions. 1) Encounters any runtime exceptions, and 2) Failed during restart. If the job fails because	Schedule a new job or restart the job.

Possible Return Codes	Condition	Recommendation	Other Instructions
		of the runtime exceptions, investigate the exception reported by the process, resolve the error and restart the job.	
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Step 4: Processing Bypassed Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	The Bypassed Record report generated successfully.	N/A	N/A
Warning (4)	This step does not issue this Return Code.	N/A	N/A
Non-Fatal Error (8)	This step does not issue this Return Code.	N/A	N/A
Failed (12)	Failed due to issues in creating the report.	Investigate and fix the reason that the report was not created before restarting the chain.	N/A
	Failed because of runtime exceptions for an unexpected situation.	Investigate and fix the reason that the report was not created before restarting the chain.	N/A
Terminated (16)	Job is terminated manually	The reason for the	If another instance of

	by the user.	termination needs to be investigated. A new job can be scheduled.	the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Initial Debt Accounting Chain: Load & Submit Transactions

Job Name	Load & Submit Transactions
Recommended Frequency	See chain job
Single Instance Required	Yes
Can the job be restarted?	Yes. Please see the Problem Resolution section for details
Reports generated	No

Overview

This job starts by first validating the batch parameters. If the parameters are valid, then it loads the records from the XML file(s) generated by the Initial Debt Accounting job into the Transaction catalog. This job uses the MultiProcessImport feature to load and submit the transactions created in the XML file from the first job step. If the parameters are not valid, the job issues appropriate messages and ends with a status of *Failed*.

Major Input

- BondDocuments.xml
- LeaseDocuments.xml
- LoanDocuments.xml

Process Steps	Messages
1. Parameter Validation	<ul style="list-style-type: none"> • Validating Batch Parameters. • Each valid parameter is listed followed by any value:

Process Steps	Messages
	<ul style="list-style-type: none"> • If the Thread Count is not a valid integer then “Invalid value received for parameter THREAD_COUNT (expected number): ##” is recorded in the job log. • If the Thread Count is not valid integer > 0 then “The valid job thread count starts with 1. Receive value: ##” is recorded in the job log. • If the Mode is not provided then “MODE parameter cannot be left blank (expected values 1, 2, or 3)” is recorded in the job log. • If the Mode is provided and mode is not => 1 and not =< 3 then “Invalid value received for parameter MODE (expected values 1, 2, or 3): ##” is recorded in the job log. • If the Commit Block Size is not a valid integer > 1 then “Invalid value received for parameter COMMIT_BLOCK_SIZE (expected value >1): ##” is recorded in the job log. • If the Block Size is not a valid integer > 1 then “Invalid value received for parameter BLOCK_SIZE (expected value >1): ##” is recorded in the job log. • If the Polling Frequency is a valid integer and < 5 then “Invalid value received for parameter SLEEP_INTERVAL (expected value >=5): ##” is recorded in the job log. • If the Logging Frequency is a valid integer and less than 30 then “Invalid value received for parameter LOG_STATUS_INTERVAL (expected value >= 30): ##” is recorded in the job log. • If the Catalog ID of the System Maintenance Utility job is not a valid integer greater than one then “Invalid value received for parameter SMU_CTLG_ID (expected value >1): ##” is recorded in the job log. • If the Other Action is not provided and run mode is 3, then “Other Action is required when run on mode 3” is recorded in the job log. • If the Other Action is provided and run mode is 1 or 2 then “Other Action is valid only for Mode 3” is recorded in the job log. • If the location of the source file of records is not a valid directory, then “Invalid value read for parameter FILE_INPUT_DIR (expected value = a valid directory): #####” is recorded in the job log. • If the Stagger Time is not a valid integer > 1 then “Invalid value received for parameter STAGGER_TIME (expected value >1): ##” is recorded in the job log. • If the Comma Separated list of input XML files is not provided then “No input file to process” is recorded in job log. • If the Comma Separated list of input XML files is provided and a file does not exist or does not end with

Process Steps	Messages
	<p>xml then “Invalid / non existing file input part in value for parameter FILE_LIST (expected value = a valid list if file):#####” is recorded in job log.</p> <ul style="list-style-type: none"> • If the Output Location for the file segments is not a valid directory then “Invalid value read for parameter FILE_OUTPUT_DIR (expected value = a valid directory): #####” is recorded in the job log. • Parameter validation completed.
2. Multiple Job Processing	<ul style="list-style-type: none"> • Setting up job for parameter file: (Parameter Location path)\Parm_#####_#.txt • Enabled job with Id=##### • Created Job ##### for Parm file (Export Import directory path)\Parm_#####_#.txt • (Repeated for each file and job combination) • Committed child jobs • Child job pending count:# Job Id[#####] Status=X (Repeated for each job) • Deleting part exception file: (Export Import directory path)\FailedDebtDocExcepReport_#####_#.txt • (Repeated for each file) • Deleting split input XML file: (Export Import directory path)\BondsDocuments_#####_#.xml, LeasesDocuments_#####_#.xml, LoanDocuments_#####_#.xml • (Repeated for each file) • Run Ended

Batch Parameters

Parameter	Description	Default Value
XML Transaction Limit (BLOCK_SIZE)	Optional block size for the number of transactions to be split out into files. If left blank, 1 is the default. Set this performance parameter to a value that will split an XML file into individual files sufficient for timely processing.	1
Commit Block Size (COMMIT_BLOCK_SIZE)	Optional number of records to commit at a time. If left blank, the ADV30Parms.ini file will supply a value.	10
Input File Directory (FILE_INPUT_DIR)	Required location of the source file of records.	\$\$AMSROOT\$\$/ExportImport/PaymentBilling
Input File Listing (FILE_LIST)	Required comma separated list of input XML files to load.	BondDocuments.xml, LeaseDocuments.xml,

		LoanDocuments.xml
Output File Directory (FILE_OUTPUT_DIR)	Required output location for the file segments.	\$\$AMSROOT\$\$/ExportImport/PaymentBilling
File Prefix (FILE_PREFIX)	Optional file prefix for Parameter and Data Files created by jobs.	No default
Apply Overrides at Import (I_SMU_APPLY_OVERRIDES)	Required System Maintenance Utility flag to indicate Apply Overrides in Import Mode.	true
Bypass Approvals at Import (I_SMU_BYPASS_APPROVAL)	Required System Maintenance Utility flag to indicate Bypass Approvals in Import Mode.	false
Bypass ADNT at Import (I_SMU_BYPS_ADNT_FL)	Required System Maintenance Utility flag to indicate Bypass ADNT in Import Mode.	true
Import Status (I_SMU_DOC_STATUS_CD)	Required System Maintenance Utility Transaction Status for Import Mode.	2
Override Level at Import (I_SMU_OVERRIDE_LVL)	Optional System Maintenance Utility Override Level for Import Mode. If 0 or left blank and the Apply Overrides parameter is <i>true</i> then the level of the user executing the chain job is used.	No default
Restart Indication at Import (I_SMU_RESTART_FL)	Required System Maintenance Utility flag to indicate Save Restart info in Import Mode.	true
Logging Frequency (LOG_STATUS_INTERVAL)	Required logging frequency (in seconds) for controller thread reporting status of child threads to the system log.	300
SMU Mode (MODE)	Required mode (1 = Import only, 2 = Import & Submit, 3 = Import, Other Action, and Submit).	2
Polling Frequency (SLEEP_INTERVAL)	Required polling frequency (in seconds) for internal controller thread for checking child processes.	5
SMU Catalog ID (SMU_CTLG_ID)	Required Catalog ID of the System Maintenance Utility job that is spawned as the child process.	3
Lag Time (STAGGER_TIME)	Required lag time in seconds between the spawning of each child process.	30
Apply Overrides at	Required System Maintenance Utility flag to indicate Apply Overrides in Submit	true

Submit (S_SMU_APPLY_O VERRIDES)	Mode.	
Bypass Approval at Submit (S_SMU_BYPASS_ APPROVAL)	Required System Maintenance Utility flag to indicate Bypass Approvals in Submit Mode.	false
Exception Report File Name (S_SMU_EXCEP_R EP_FILE_NM)	Required System Maintenance Utility Exception File for Submit Mode.	FailedDebtDocExcepRepor t.txt
Exception Report Indication (S_SMU_EXCEP_R EP_IND)	Required System Maintenance Utility Exception Report Indicator for Submit Mode. Values are:1 = Detailed, 2 = Failed Transactions, 3 = Processed Transactions, 4 = Failed Transaction Lines, and 5 = Transaction Status.	4
Submit Severity Flag (S_SMU_EXP_SEV _FL)	Optional System Maintenance Utility flag to indicate the Severity Flag in Submit Mode.	1
Override Leve at Submit (S_SMU_OVERRID E_LVL)	System Maintenance Utility Override Level for Submit Mode. If 0 or left blank and the Apply Overrides parameter is <i>true</i> then the level of the user executing the chain job is used.	
Restart Indication at Submit (S_SMU_RESTART _FL)	Required System Maintenance Utility to indicate Save Restart info in Submit Mode.	true
Number of Jobs (THREAD_COUNT)	Required number of jobs to start.	1

Major Output

- The result of this job is the loading of transaction records from the input file. Files are first split and then imported.
- During job processing there are two categories of temporary files (they are deleted upon successful job completion):
 - Split input files.
 - Exception report files for each child job.
- If any of the child jobs encounter an exception an appropriate exception message is merged into the Exception Report file for the job (specified by the name in the job parameters).
- A parameter file is generated for each split XML file, and then the spawned jobs read those input parameter files in a sequential order.

Batch Job Return Codes

The following table shows the potential job Return Codes for Load & Submit Transactions.

Return Code	Condition
Successful (1)	All of the records are loaded into the Transaction Catalog successfully or the input files are empty. All of the transactions loaded were submitted successfully.
Warning (4)	This Return Code is issued when some of the records failed to load where all other records were loaded successfully.
Non-Fatal Error (8)	None of the records get loaded into the Transaction Catalog.
Failed (12)	<ul style="list-style-type: none"> • Parameters are invalid. • When the input file is not found in the specified directory. • Restart failed because another instance of the Initial Debt Accounting Chain has already been run successfully. • Runtime exceptions encountered for any unexpected situations. When the job ends with a Return Code of Failed, subsequent jobs in the chain is set to inactive.
Terminated (16)	This Return Code is issued when the job is terminated by the user. When the job ends with a Return Code of Terminated, subsequent jobs in the chain is set to Inactive.
System Failure (20)	This Return Code is issued when the job is terminated because of database server or network issues. When this job ends with a Return Code of System Failure, subsequent jobs in the chain is set to Inactive.

Sort Sequence

N/A

Selection Criteria

The input record files (specified in the Job Parameter) are selected.

Problem Resolution

If the process fails for any reason the Multi Threaded Transaction Loader job supports restart functionality. Upon restarting the Multi Threaded Transaction Loader job, the failed job is picked up and run. A checkpoint is maintained for the overall Multi Threaded Transaction Loader job as well as the individual child jobs to identify how far the job successfully executed before failing. Therefore, when the user restarts the failed job the system does not start from the first step of the Multi Threaded Transaction Loader but instead starts processing from the exact point at which it failed.

For example, let's assume that the failed job split the input file in to five child jobs and that the third and the fourth child jobs failed. When restarted only those failed child jobs, that is, the third and the fourth ones are picked up and processed. The restarted job would not process child jobs one, two or three given they have already completed successfully in the earlier run.

The following table shows the possible Return Codes and recommendations for each processing step specific to the job in the chain. For general errors and recommendations, refer to the SMU Transaction Upload run sheet in the *CGI Advantage Financial – Utilities Run Sheet Guide*.

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All transactions were loaded and submitted.	N/A	N/A
Warning (4)	<p>This Return Code is issued when the job fails to load some of the transactions.</p> <p>Sample Message: Unable to load all of the transactions into the catalog.</p>	<p>Analyze the reason why records failed to load to the Transaction Catalog.</p> <p>When the current run is a re-execution of a previous run (the same input file is used in a new job) this error may be seen because the records that previously loaded successfully will not load again (duplicate entry on the Transaction Catalog is not allowed).</p> <p>If the records failed to load to the Transaction Catalog due to any other reason, then analyze the reason, resolve it and schedule a new job</p>	<p>If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.</p>
Non-Fatal Error (8)	<p>This Return Code is issued when the job failed to load all of the transactions.</p>	<p>Correct what is most likely a setup issue and restart the spawned SMU job and then restart the load/submit job.</p>	<p>If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.</p>
Failed (12)	<p>In this step, the job can fail under the following conditions:</p> <ul style="list-style-type: none"> • Issues in spawning jobs • Files not found • Runtime exceptions • Parameter Edits 	<p>The reason for the failure needs to be investigated and fixed before restarting the job.</p>	<p>If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.</p>
Terminated (16)	<p>Job is terminated manually by the user.</p>	<p>The reason for the termination needs to be investigated and fixed before restarting the chain.</p>	<p>If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be</p>

			scheduled.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated before restarting the chain.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Initial Debt Accounting Chain: Generate Exception Report

Job Name	Generate Exception Report
Recommended Frequency	See chain job
Single Instance Required	Yes
Can be restarted?	No
Report Generated	Yes: Initial Accounting Detail Exception Report or Initial Accounting Summary Exception Report

Overview

The final job in the Initial Debt Accounting chain generates an exception report that lists all of transactions that did not submit to the *Final* Transaction Phase. When run in the detail mode the errors are also listed for each Debt Accounting (DA), Internal Debt Accounting (IDA), and Payout (GAX) from earlier submit job steps with reference to a line within the transaction.

Major Input

- FailedDebtDocExcepReport.txt
- InitialDebtAccounting.txt

Batch Parameters

Parameter	Description	Default Value
Parameter Directory (AMSPARM)	Required Parameter Location for Generate Exception Report Job	\$\$AMSROOT\$\$/Parms
Chain Parameter File Name (CHAIN_PARM_FILE)	Required Common Chain Parameters File (.txt)	InitialDebtAccounting.txt

Exception Report File Name (EXCP_REP_FILE_NM)	Required Exception Report File Names	FailedDebtDocExcepReport.txt
Exception Report File Location (EXCP_PARM_FILE_LOC)	Exception Parameter File Location for Generate Exception Report Job	

Major Output

- Initial Accounting Detail Exception Report when Exception Report Type is 1 (Detailed) in the 1st job of the Initial Debt Accounting Chain job.
- Initial Accounting Summary Exception Report when Exception Report Type is 2 (Summary) in the 1st job of the Initial Debt Accounting Chain job.

Batch Job Return Codes

The following table shows the potential job Return Codes for the individual Generate Exception Report.

Return Code	Condition
Successful (1)	All of the validations are performed successfully and there are no records eligible for exception.
Warning (4)	Not Applicable for this job.
Non-Fatal Error (8)	At least one DA or IDA or GAX transaction failed to submit to Final Phase.
Failed (12)	<ul style="list-style-type: none"> • Input parameter file is not found. • Runtime exceptions encountered for any unexpected situations. • Technical failure. When the job ends with a Return Code of Failed, subsequent jobs in the chain is set to Inactive.
Terminated (16)	This Return Code is issued when the job is terminated by the user. When the job ends with a Return Code of Terminated, subsequent jobs in the chain is set to Inactive.
System Failure (20)	This Return Code is issued when the job is terminated because of database server or network issues. When this job ends with a Return Code of System Failure, subsequent jobs in the chain is set to Inactive.

Sort Sequence

N/A

Selection Criteria

N/A

Problem Resolution

Job cannot be restarted in this step. If the job fails a new job should be scheduled after correcting the errors that caused the job to fail.

The following table shows the possible Return Codes and recommendations for each processing step.

Step 1: Batch Parameter Validation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All batch parameter validations are successful (that is, there are no errors raised during parameter validations.)	N/A	N/A
Warning (4)	N/A	This step does not issue this Return Code.	N/A
Non-Fatal Error (8)	N/A	This step does not issue this Return Code.	N/A
Failed (12)	Required parameters are not entered. Sample Message: Parameter file name is not specified.	Enter missing required parameters and schedule a new job. Enter the parameter file name.	N/A
	Entered Parameters are not valid. Sample Message: System Assurance Report Type in Transaction Submit section not found in the parameter file.	Enter valid parameters and schedule a new job. Ensure that a valid System Assurance Report type section exists in the parameter file.	N/A
	Failed because of runtime exceptions caused by unexpected conditions.	Failure reason needs to be investigated before rescheduling the job.	N/A
Terminated (16)	Job is terminated manually by the user.	A new job can be rescheduled.	N/A
System Failure (20)	Job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated. A new job can be rescheduled.	N/A

Step 2: Exception Report Generation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All DA or IDA or GAX transactions submitted to Final transaction phase and the	N/A.	N/A

	exception report was generated successfully.		
Warning (4)	N/A	This step does not issue this Return Code.	N/A
Non-Fatal Error (8)	At least one DA or IDA or GAX failed to submit to Final transaction phase.	N/A	N/A
Failed (12)	Failed because of runtime exceptions caused by unexpected conditions.	Failure reason needs to be investigated before rescheduling the job.	N/A
Terminated (16)	Job is terminated manually by the user.	A new job can be rescheduled.	N/A
System Failure (20)	Job is terminated because of database server or Network issues.	The reason for the System Failure needs to be investigated. A new job can be rescheduled.	N/A

2.1.3 Long Term Account Reclassification

Chain or Job Name	Long Term Account Reclassification
Recommended Frequency	Yearly
Single Instance Required	Yes
Can be restarted?	Yes
Reports generated	Yes. This chain job generates the following reports: <ul style="list-style-type: none"> • Long Term Account Reclassification Bypassed Records • Long Term Account Reclassification Detail or Summary Exceptions

Overview

The Long Term Account Reclassification chain has the following jobs. Even though these jobs in the chain can be run individually by disabling other jobs, it is recommended to always run the entire chain.

1. [Long Term Account Reclassification](#)
2. [Load & Submit Transactions](#)
3. [Generate Exception Report](#)

The Long Term Account Reclassification chain in Debt Management is a group of jobs that work together to create accounting transactions that record the Long Term Account Reclassification for debt instruments. When Debt instruments are set up and activated users have a choice to allow for Debt Management Chain jobs to record and maintain the debt balances or record and maintain them manually. The Generate Initial Accounting flag determines if automatic accounting is performed. If it is, the Initial Debt Accounting Chain establishes necessary current and long term account balances. When there is long term account balance (amounts owed or due in future fiscal years), the Long Term Account Reclassification chain is used when a new year starts to move amounts just for that year out of a long term and into current accounts.

The Long Term Account Reclassification chain will select one or more schedule detail records for payments for a debt instrument; create, load, and submit transactions; and then perform exception reporting. The chain is designed to run on or after the first day of a new fiscal year, and cannot be run in advance.

Not every debt instrument selected will result in transaction creation. Some records are updated by the batch program without creating a transaction. These are listed in the Long Term Account Reclassification Bypassed Records report. Selection logic for that report is later in this run sheet. Presented first is the selection logic for transaction generation. Please note that the chain job will not update records selected for transaction creation. Instead those transactions created will update the debt instrument record when processed to *Final*.

Record Selection

Records selected for processing from the Loan Registry (LOAN), Lease Registry (LEASE), and Bond Registry (BOND) are those where the following conditions are met:

Debt Instruments

- Major Type of Debt matches the Type of Debt batch parameter, and

- The Last Long Term Account Reclass value is blank or is one less than the current fiscal year, and
- Record Initial Accounting flag is *checked* and then one of the three depending on the Major Type of Debt:

Loan

- The Application/Loan Indicator is *Loan*, and
- Debt Instrument Status is *Active Loan* or *Loan Completed*, and
- Total Principal of selected Schedule Detail records > \$0.00.

Lease

- Debt Instrument Status is *Active Lease* or *Lease Completed*, and
- Major Type of Lease is *Capital*, and
- Depending on the Lessor/Lessee Indicator:
 - If *Lessee*, then the total Principal amount of selected Schedule Detail records > \$0.00, or
 - If *Lessor*, then either the total Principal amount or the total Interest amount of the selected Schedule Detail records > \$0.00.

Bond

- Debt Instrument Status is *Active Bond* or *Bond Completed*.

Schedule

- Selected Schedule flag is *checked*, and
- Schedule Start Date < Current Year Start Date.

Schedule Details

- At least 1 Schedule Detail for the Selected Schedule has a Scheduled Date >= Current Year Start Date, and
- Scheduled Date < = to Current Year End Date, and
- Schedule Detail Type = *Regular Payment*, *Purchase Payment*, *Renewal Penalty Payment*, or *Residual Value Adjustment*.

When Schedule Detail records are selected, the process will create one or more transactions based on settings inferred to the debt instrument from the selected Debt Type associated with the instrument. Each transaction created will have at least two accounting lines and sometimes more depending on how the debt instrument was setup. Descriptive information about the debt instrument is placed on the header and accounting lines for later recognition. The descriptive information on the accounting line is written to the Accounting Journal for reporting purposes.

One of two types of transactions is created based on Debt Instrument settings:

Loans:

- Debt Accounting (DA) transaction when Major Type of Loan is *External Given* or *External Taken*.
- Internal Debt Accounting (IDA) transaction when Major Type of Loan is *Internal Loan*.

Leases:

- Debt Accounting (DA) transaction

Bonds:

- Debt Accounting (DA) transaction

The Long Term Account Reclassification process will include two reports. The first is a Long Term Account Reclassification Bypassed Records report to list all selected debt instrument records that were either set up to bypass Long Term Account Reclassification or had settings that caused the record to be skipped. The report has several sections that list records under a reason description for why the record was not selected.

When the bypassed reason is *Not Using Automated Accounting* or *Debt Instrument Status is Manually Closed*, the system will directly update the Long Term Reclass Reported flag on the selected debt instrument. This update prevents later runs of the chain from having to re-evaluate the record and continue to list it in the report.

The second report will include an exception report to list any Debt Accounting (DA) or Internal Debt Accounting transaction (IDA transactions that failed to submit to *final* Transaction phase through the Multi-Processor Import job).

Major Input

- Debt Instrument Registry (R_DEBT_DEBTINST)
- Borrower Information (R_DEBT_BRWR)
- Borrower COA (R_DEBT_BRWRACTG)
- Lender Information (R_DEBT_LNDR)
- Lender COA (R_DEBT_LNDRACTG)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Debt Type Table (R_DEBT_TYPE)

Major Output

- Debt Accounting transaction (DA)
- Internal Debt Accounting transaction (IDA)
- Long Term Account Reclassification Bypassed Records Report
- Long Term Account Reclassification Detail Exception or Long Term Account Reclassification Summary Exception Report
- Debt Instrument Registry (R_DEBT_DEBTINST)

Chain Job Return Codes

The following table shows the potential return codes for the Long Term Account Reclassification chain job. Note that the Chain job will end with the highest return code across all of the jobs.

Return Code	Condition
Successful (1)	All of the jobs end successfully.
Warning (4)	One of the jobs in the chain ends with a return code of Warning.
Non-Fatal Error (8)	One of the jobs in the chain ends with a return code of Non -atal Error.
Failed (12)	One of the jobs in the chain ends with a return code of Failed.
Terminated (16)	One of the jobs in the chain ends with a return code of Terminated.
System Failure (20)	One of the jobs in the chain ends with a return code of System Failure.

Problem Resolution

If any of the jobs in the chain failed due to application errors it is advisable to restart the job (when possible) after correcting the errors instead of rescheduling the job. Restarting the job will reduce the processing time since the job will resume from where it has last committed and select only the unprocessed records. When restarting is not an option, the entire chain can be run again.

Please refer to the individual jobs for details regarding the specific job processes and problem resolution.

Long Term Account Reclassification Chain: Long Term Account Reclassification

Job Name	Long Term Account Reclassification
Recommended Frequency	See chain job
Single Instance Required	Yes
Can be restarted?	Yes. See the overview and the Problem Resolution section for more details.
Reports Generated	Long Term Account Reclassification Bypassed Records Report

Overview

This first job in the chain performs all record selection, XML file generation, and generates a report of records that did not result in a transaction being created.

This job step consists of the following basic steps:

1. **Parameter Validation:** In this step, the process verifies the parameters. If the parameter validation is successful, the job will go to the next step. Otherwise the job will end with a return code of 'Failed'.
2. **Processing Debt Instrument Records:** In this step this job will create one or more of the following transactions: Debt Accounting (DA) and/or Internal Debt Accounting (IDA) transactions based on criteria described in the chain job part of this run sheet. This step

then generates an XML file with those transactions with header, vendor line (when applicable), and accounting line details. There is a separate transaction for each debt instrument. Although not likely invoked, transaction size is governed by MAX_LINE_LIMIT records for CH_DOC_ACTG, IET_DOC_VEND, and IET_DOC_VEND on the Transaction Required Components (DCREQ) page in the Administration application. When a limit is reached, the step will start another transaction for the debt instrument.

3. **Processing Bypassed Records:** This last step creates the Long Term Account Reclassification Bypassed Records Report and updates certain records to prevent future selection. (Please see details of this in the chain job section of the run sheet).

Process Steps	Messages
1. Parameter Validation	<ul style="list-style-type: none"> • Validating Batch Parameters • Each valid parameter is listed followed by any value <ul style="list-style-type: none"> • If Type of Debt is not provided, then “Type of Debt is required” is recorded in the job log. • If Type of Debt is provided but is not equal to 1 or 2 or 3 or 4, then “Invalid value for Type of Debt” is recorded in the job log. • If Record Date is provided and is not valid on Calendar Date (CLDT), then “Record Date is not valid on CLDT” is recorded in the job log. • If Record Date is provided but not in the correct format (mm/dd/yyyy), then “Record Date not in correct format mm/dd/yy” is recorded in the job log. • If Debt Accounting transaction code is not provided, then “Debt Accounting transaction code is required” is recorded in the job log. • If Debt Accounting transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “Debt Accounting Transaction Code not valid and active on DCTRL for CH transaction type” is recorded in the job log. • If Internal Debt Accounting transaction code is not provided, then “Internal Debt Accounting transaction code is required” is recorded in the job log. • If Internal Debt Accounting transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “Internal Debt Accounting Transaction Code not valid and active on DCTRL for IET transaction type” is recorded in the job log. • If Department code is not provided, then “Department code is required” is recorded in the job log. • If Department code is provided but is not valid and active on Department (DEPT), then “Department code must be valid and active on DEPT” is recorded in the job log. • If Transaction Unit Code is provided but is not valid and active on Unit (UNIT), then “Transaction Unit Code not valid and active on UNIT” is recorded in the job log.

Process Steps	Messages
	<ul style="list-style-type: none"> • If an Automatic Transaction Numbering (ADNT) record for the Debt Accounting Transaction Code, Transaction Department Code, and Debt Accounting Transaction Prefix cannot be found, then “ADNT entry not found for Debt Accounting Transaction Code” is recorded in the job log. • If an ADNT record for the Internal Debt Accounting Transaction Code, Transaction Department Code, and Internal Debt Accounting Transaction Prefix cannot be found on ADNT, then “ADNT entry not found for Internal Debt Accounting Transaction Code” is recorded in the job log. • If Commit Size is not provided, then “‘Commit Size’ defaulted to 1000” is recorded in the job log. • If Commit Size is not a valid integer greater than zero, then “‘Commit Size’ must be a positive whole number greater than zero” is recorded in the job log. • If Progression Counter is not provided, then “‘Progression Counter defaulted to 1000” is recorded in the job log. • If Progression Counter is not a valid integer greater than zero, then “‘Progression Counter’ must be a positive whole number greater than zero” is recorded in the job log. • If Exception Report Type is not provided, then “‘Exception Report Type is defaulted to 1” is recorded in the job log. • If ‘Exception Report Type’ is provided but is not a 1 or 2, then “Exception Report Type must be 1 or 2” is recorded in the job log. • If AMSEXPOR is not provided, then “‘The AMSEXPOR Parameter File cannot be empty” is recorded in the job log. • If AMSEXPOR is not a valid directory, then “The value entered in the AMSEXPOR parameter is not a valid directory” is recorded in the job log. • If AMSPARM is not provided, then “‘The AMSPARM Parameter File cannot be empty” is recorded in the job log. • If AMSPARM parameter is not a valid directory, then “The value entered in the AMSPARM parameter is not a valid directory” is recorded in the job log. • Parameter validation completed
<p>2. Processing Debt Instrument Records</p>	<ul style="list-style-type: none"> • Start Debt Instrument record selection. • End Debt Instrument record selection. • Processing eligible Debt Instrument Registry records. • Processing eligible Debt Instrument Registry records completed.

Process Steps	Messages
	<ul style="list-style-type: none"> • Depending of progression Counter size the '<<Progression Count>> record(s) processed' is displayed in log. • Total <<TOTAL COUNT>> Debt Instrument record(s) processed. • Total <<DADOCCOUNT>> Debt accounting transactions are created for Debt Instrument records. • Total <<IDADOCCOUNT>> Internal Debt accounting transactions are created for Debt Instrument records.
<p>3. Processing Bypassed Records</p>	<ul style="list-style-type: none"> • Selecting eligible records. • Selection of eligible records completed. • Processing the selected records. • Depending of progression Counter size the '<<Progression Count>> record(s) processed' is displayed in log. • Total <<Bond Total Count>> Bond Bypass Selection Record(s) report processed. • Total <<Lease Total Count>> Lease Bypass Selection Record(s) report processed. • Total <<Loan Total Count>> Loan Bypass Selection Record(s) report processed. • Processing completed.

Restartability Information

This job step is implemented with checkpoints. If the process fails for any reason (such as the network is down or the server is down), then the process can restart from the last point where it stopped.

If the job fails in any of the above steps after #1 - Parameter Validation; it can be restarted by resolving the errors. Any job failed during parameter validations would not be restarted. If the job is restarted, it will start from the step where it failed earlier and will not start from the beginning. For example, the job failed in the step Bypassed Records report due to some fatal condition (i.e. table space error). If the job is restarted after resolving the table space issue, the job will start from the step Bypassed Records report and not from the selection and processing of Debt Instrument records.

Instead of restarting the job, if a new job is scheduled with the same set of parameters after resolving the table space issue, the job will start from the first step.

The restart will fail if another instance of this job has been scheduled and ran successfully before restarting the failed job.

Minor Input

Tables

- Application Parameters (APPCTRL / IN_APP_CTRL: APPL_SYS_DT)
- Calendar Date (CLDT / R_CLDT) – Current FY determined from Application Date

- Fiscal Year (FY - R_FY) – Determines start and end dates of the current fiscal year or any year specified in the Fiscal Year parameter

Major Input

Tables

- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Borrower (R_DEBT_BRWR)
- Borrower COA (R_DEBT_BRWRCTG)
- Lender Information (R_DEBT_LNDR)
- Lender COA (R_DEBT_LNDRCTG)
- Debt Type (DEBTTYPE / R_DEBT_TYPE)

Batch Parameters

Parameter	Description	Default Value
Export Directory (AMSEXPORT)	Required location where the XML file is written. If left blank the system default is used.	\$\$AMSROOT\$\$/ExportImport
Parameter Directory (AMSPARM)	Required location where the load and submit parameter files is written for later job steps. If left blank the system default is used.	\$\$AMSROOT\$\$/Parms
Chain Parameter File Name (CHAIN_PARM_FILE)	Required name identifying the common chain parameter file (.txt).	LongTermActgReclass.txt
Client Name (CLIENT_NM)	Optional client name for reports created.	No default
Commit Block Size (COMMIT_SIZE)	Required commit block size for performance tuning.	1000
Debt Accounting Transaction Code (DA_DOC_CD)	Required Debt Accounting transaction code.	DA
Debt Accounting Prefix (DA_DOC_PFX)	Optional Debt Accounting Transaction Prefix.	No default
Department (DOC_DEPT_CD)	Required Department used for all transactions created.	No default
Record Date (DOC_REC_DT)	Optional Transaction Record Date used when the defaulting Application Date is not desired.	No default

Parameter	Description	Default Value
Unit (DOC_UNIT_CD)	Optional Unit code for all transactions.	No default
Exception Report Type (EXCP_RPT_TYP)	Required Exception Report Type (1=Detailed, 2=Summarized, if not entered then defaulted to Detailed).	1
Internal Debt Accounting Transaction Code (IDA_DOC_CD)	Required Internal Debt Accounting transaction code.	IDA
Internal Debt Accounting Prefix (IDA_DOC_PFX)	Optional Internal Debt Accounting Transaction Prefix.	No default
Progression Counter Size (PROG_CTR_SIZE)	Required Progression Counter to control informational messages about processing throughput.	1000
Major Type of Debt (TYP_OF_DEBT)	Required Type of Debt for selection: 1 – Bonds only, 2 – Leases only, 3 – Loans only, and 4 – All Types.	4

Major Output

- BondDocuments.xml (XML file for Bond transactions)
- LeaseDocuments.xml (XML file for Lease transactions)
- LoanDocuments.xml (XML file for Loan transactions)
- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Long Term Account Reclassification Bypassed Records Report
- LongTermActgReclass.txt

Batch Job Return Codes

The following table shows the potential job return codes for the Long Term Account Reclassification job.

Return Code	Condition
Successful (1)	All of the selected records are processed successfully.
Warning (4)	No eligible records found.
Non-Fatal Error (8)	N/A
Failed (12)	<p>The job will fail under the following conditions:</p> <ul style="list-style-type: none"> • Parameters are invalid • Run time exceptions for unexpected situations. <p>When this job ends with a return code of Failed, subsequent jobs in the chain is set to inactive.</p>

Return Code	Condition
Terminated (16)	This return code is issued when the job is terminated by the user. When this job ends with a return code of Terminated subsequent jobs in the chain is set to inactive.
System Failure (20)	This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.

Sort Sequence

Processing Debt Instrument Records

Major Type of Debt, Debt Instrument ID

Bypassed Records Report

Major Type of Debt, Debt Instrument ID

Selection Criteria

Processing Debt instrument Records

- See chain job description for selection criteria

Bypassed Records Report

i. Not Using Automated Accounting

All selection criteria from the initial record selection are met except:

- Record Initial Accounting flag is not checked, and
- Long Term Reclass Reported is unchecked.

A record will only be reported for this reason only the first time it is processed. After that, the update to the Long Term Reclass Reported flag by the chain will cause the record to be skipped. Such records need to be reviewed to determine if the necessary accounting to set up the debt instrument has been manually recorded or interfaced.

ii. No Schedule Details in Current Year

All Selection Criteria from initial record selection are met except:

- No Schedule Detail record exists for the Selected Schedule with a Scheduled Date >= Current Year Start Date but <= Current Year End Date, and
- Status is *Active Loan* or *Active Lease*

When Major Type of Debt is *Bond* it will not be listed in the 'No Schedule Details in Current Year' section of the Bypassed Records report because most bonds are paid at maturity. Therefore, the report will never list bonds with this bypassed record reason. Being reported for this reason is not necessarily a bad thing, but the schedule should be reviewed if it is felt that something should have existed.

iii. No Principal Due in Current Year

All Selection Criteria from initial record selection are met:

- Major Type of Debt is *Loan*, or
- Major Type of Debt is *Lease* with Lessor/Lessee Indicator of *Lessee*, and
 - All selected Schedule Detail records have \$0.00 for Principal, or

- Major Type of Debt is *Lease* with Lessor/Lessee Indicator of *Lessor*, and
 - All selected Schedule Detail records have \$0.00 for Principal and for Interest.

When Major Type of Debt is *Bond* it will not be listed in the ‘No Principal Due in Current Year’ section of the Bypassed Records report because most bonds are paid at maturity. Therefore, the report will never list bonds with this bypassed record reason. Being reported for this reason is not necessarily a bad thing, but the schedule should be reviewed if it is felt that some amount should have existed.

iv. Debt Instrument Status Manually Closed

All Selection Criteria from initial record selection are met except:

- Long Term Reclass Reported is *unchecked* and one of the following is true depending on Major Type of Debt:
 - *Loan Manually Closed*
 - *Lease Manually Closed*
 - *Bond Manually Closed*

A record will only be reported for this reason only the first time it is processed. After that, the update to the Long Term Reclass Reported flag by the chain will cause the record to be skipped. Such records need to be reviewed to determine if the necessary accounting to remove any open balances has been manually recorded or interfaced.

v. No Reclass Recorded in Prior Year:

All Selection Criteria from initial record selection are met except:

- Last Long Term Account Reclass value is more than one year before the Current Year.

Being reported for this reason means that the debt instrument or instruments were not reclassified in the prior year, but should have been. If it appears that all debt instruments (or all for a Major Type of Debt) were skipped last year, then the Application Date can be back-dated to the last date of the prior year and the Fiscal Year and Accounting Period parameters should be used to record the reclassification back into a period in the prior year. After that, the chain can be run for the current year. If the volume is low, manual data entry will also get the prior year reclassified by setting the Debt Accounting Event on the DA or IDA accounting line to Long Term Account Reclass (2).

Problem Resolution

The following table shows the possible return codes and recommendations for each processing step.

Step 1: Parameter Validation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	Successful	N/A	N/A
Warning (4)	This step does not issue this return code.	N/A	N/A

Possible Return Codes	Condition	Recommendation	Other Instructions
Non-Fatal Error (8)	This step does not issue this return code.	N/A	N/A
Failed (12)	Required Parameters are not entered. Sample Message: Department Code is Required.	Schedule a new job by passing required parameter values.	N/A
	Failed because of runtime exceptions for an unexpected situation.	The reason for the failure needs to be investigated before scheduling a new job.	N/A
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated and fixed before scheduling a new job.	N/A
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated and fixed before scheduling a new job.	N/A

Step 2: Processing Debt instrument Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All of the selected records are processed successfully.	N/A	N/A
Warning (4)	No eligible records were found on the tables for processing.	N/A	N/A
Non-Fatal Error (8)	This step does not issue this return code.	N/A	N/A
Failed (12)	Job failed due to Fatal conditions.	In this step, the job can fail under the following two conditions. <ul style="list-style-type: none"> Encounters any runtime exceptions and Failed during restart. <p>If the job fails because of the runtime exceptions,</p>	Schedule a new or restart job

Possible Return Codes	Condition	Recommendation	Other Instructions
		investigate the exception reported by the process, resolve the error and restart the job.	
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated. A new job can be scheduled or the existing job restarted.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated and fixed before a new job can be scheduled or the existing job restarted.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Step 3: Processing Bypassed Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	The Bypassed Record report generated successfully.	N/A	N/A
Warning (4)	This step does not issue this return code.	N/A	N/A
Non-Fatal Error (8)	This step does not issue this return code.	N/A	N/A
Failed (12)	Failed due to issues in creating the report.	Investigate and fix the reason the report was not created before restarting the chain.	Running a new chain will remove prior report data and only report on what the subsequent chain finds.
	Failed because of runtime exceptions for an unexpected situation.	Investigate and fix the reason the report was not created before restarting the chain.	N/A

Long Term Account Reclassification: Load & Submit Transactions

Job Name	Load & Submit Transactions
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Recommended Frequency	See chain job
Single Instance Required	Yes
Can the job be restarted?	Yes. Please see the Problem Resolution section for details
Reports generated	No

Overview

This job starts by first validating the batch parameters. If the parameters are valid, then it loads the records from the XML file (s) generated by the Long Term Account Reclassification job into the Transaction catalog. If the parameters are not valid, the job issues appropriate messages and ends with a status *Failed*. This job uses the Multi-Processor Import feature to load and submit the transactions created in the XML file from the first job step.

Major Input

- BondDocuments.xml
- LeaseDocuments.xml
- LoanDocuments.xml

Process Steps	Messages
1. Parameter Validation	<ul style="list-style-type: none"> • Validating Batch Parameters. • Each valid parameter is listed followed by any value. If the Thread Count is not a valid integer then “Invalid value received for parameter THREAD_COUNT (expected number): ##” is recorded in the job log. • If the Thread Count is not valid integer > 0 then “The valid job thread count starts with 1. Receive value: ##” is recorded in the job log. • If the Mode is not provided then “MODE parameter cannot be left blank (expected values 1, 2, or 3)” is recorded in the job log. • If the Mode is provided and Mode is not => 1 and not =< 3 then “Invalid value received for parameter MODE (expected values 1, 2, or 3): ##” is recorded in the job log. • If the Commit Block Size is not a valid integer > 1 then “Invalid value received for parameter COMMIT_BLOCK_SIZE (expected value >1): ##” is recorded in the job log. • If the Block Size is not a valid integer > 1 then “Invalid value received for parameter BLOCK_SIZE (expected value >1): ##” is recorded in the job log. • If the Polling Frequency is a valid integer and < 5 then “Invalid value received for parameter SLEEP_INTERVAL

Process Steps	Messages
	<p>(expected value >=5): ##" is recorded in the job log.</p> <ul style="list-style-type: none"> • If the Logging Frequency is a valid integer and less than 30 then "Invalid value received for parameter LOG_STATUS_INTERVAL (expected value >= 30): ##" is recorded in the job log. • If the Catalog ID of the System Maintenance Utility job is not a valid integer greater than one then "Invalid value received for parameter SMU_CTLG_ID (expected value >1): ##" is recorded in the job log. • If the Other Action is not provided and run mode is 3, then "Other Action is required when run on mode 3" is recorded in the job log. • If the Other Action is provided and run mode is 1 or 2 then "Other Action is valid only for Mode 3" is recorded in the job log. • If the location of the source file of records is not a valid directory, then "Invalid value read for parameter FILE_INPUT_DIR (expected value = a valid directory): #####" is recorded in the job log. • If the Stagger Time is not a valid integer > 1 then "Invalid value received for parameter STAGGER_TIME (expected value >1): ##" is recorded in the job log. • If the Comma Separated list of input XML files is not provided then "No input file to process" is recorded in job log. • If the Comma Separated list of input XML files is provided and a file does not exist or does not end with xml then "Invalid / non existing file input part in value for parameter FILE_LIST (expected value = a valid list if file):#####" is recorded in job log. • If the Output Location for the file segments is not a valid directory then "Invalid value read for parameter FILE_OUTPUT_DIR (expected value = a valid directory): #####" is recorded in the job log. • Parameter validation completed.
<p>2. Multiple Job Processing</p>	<ul style="list-style-type: none"> • Setting up job for parameter file: (Parameter Location path)\Parm_#####_#.txt • Enabled job with Id=##### • Created Job ##### for Parm file (Export Import directory path)\Parm_#####_#.txt • (Repeated for each file and job combination) • Committed child jobs • Child job pending count:# Job Id[#####] Status=X (Repeated for each job) • Deleting part exception file: (Export Import directory path)\FailedDebtDocExcepReport_#####_#.txt • (Repeated for each file)

Process Steps	Messages
	<ul style="list-style-type: none"> Deleting split input XML file: (Export Import directory path)\BondsDocuments_#####_#.xml, LeasesDocuments_#####_#.xml LoanDocuments_#####_#.xml (Repeated for each file) Run Ended

Batch Parameters

Parameter	Description	Default Value
XML Transaction Limit (BLOCK_SIZE)	Optional block size for the number of transactions to be split out into files. If left blank, 1 is the default. Set this performance parameter to a value that will split an XML file into individual files sufficient for timely processing.	1
Commit Block Size (COMMIT_BLOCK_SIZE)	Optional number of records to commit at a time. If left blank, the ADV30Parms.ini file will supply a value.	10
Input File Directory (FILE_INPUT_DIR)	Required location of the source file of records.	\$\$AMSROOT\$\$/ExportImport/PaymentBilling
Input File Listing (FILE_LIST)	Required comma separated list of input XML files to load.	BondDocuments.xml, LeaseDocuments.xml, LoanDocuments.xml
Output File Directory (FILE_OUTPUT_DIR)	Required output location for the file segments.	\$\$AMSROOT\$\$/ExportImport/PaymentBilling
File Prefix (FILE_PREFIX)	Optional file prefix for Parameter and Data Files created by jobs.	No default
Apply Overrides at Import (I_SMU_APPLY_OVERRIDE)	Required System Maintenance Utility flag to indicate Apply Overrides in Import Mode.	true
Bypass Approvals at Import (I_SMU_BYPASS_APPROVAL)	Required System Maintenance Utility flag to indicate Bypass Approvals in Import Mode.	false
Bypass ADNT at Import (I_SMU_BYPS_ADNT_FL)	Required System Maintenance Utility flag to indicate Bypass ADNT in Import Mode.	true
Import Status	Required System Maintenance Utility	2

(I_SMU_DOC_STA_CD)	Transaction Status for Import Mode.	
Override Level at Import (I_SMU_OVERRIDE_LVL)	Optional System Maintenance Utility Override Level for Import Mode. If 0 or left blank and the Apply Overrides parameter is <i>true</i> then the level of the user executing the chain job is used.	No default
Restart Indication at Import (I_SMU_RESTART_FL)	Required System Maintenance Utility flag to indicate Save Restart info in Import Mode.	true
Logging Frequency (LOG_STATUS_INTERVAL)	Required logging frequency (in seconds) for controller thread reporting status of child threads to the system log.	300
SMU Mode (MODE)	Required mode (1 = Import only, 2 = Import & Submit, 3 = Import, Other Action, and Submit).	2
Polling Frequency (SLEEP_INTERVAL)	Required polling frequency (in seconds) for internal controller thread for checking child processes.	5
SMU Catalog ID (SMU_CTLG_ID)	Required Catalog ID of the System Maintenance Utility job that is spawned as the child process.	3
Lag Time (STAGGER_TIME)	Required lag time in seconds between the spawning of each child process.	30
Apply Overrides at Submit (S_SMU_APPLY_OVERRIDES)	Required System Maintenance Utility flag to indicate Apply Overrides in Submit Mode.	true
Bypass Approval at Submit (S_SMU_BYPASS_APPROVAL)	Required System Maintenance Utility flag to indicate Bypass Approvals in Submit Mode.	false
Exception Report File Name (S_SMU_EXCEP_REP_FILE_NM)	Required System Maintenance Utility Exception File for Submit Mode.	FailedDebtDocExcepReport.txt
Exception Report Indication (S_SMU_EXCEP_REP_IND)	Required System Maintenance Utility Exception Report Indicator for Submit Mode. Values are: 1 = Detailed, 2 = Failed Transactions, 3 = Processed Transactions, 4 = Failed Transaction Lines, and 5 = Transaction Status.	4
Submit Severity Flag (S_SMU_EXP_SEV_FL)	Optional System Maintenance Utility flag to indicate the Severity Flag in Submit Mode.	1

Override Level at Submit (S_SMU_OVERRIDE_LVL)	System Maintenance Utility Override Level for Submit Mode. If 0 or left blank and the Apply Overrides parameter is <i>true</i> then the level of the user executing the chain job is used.	
Restart Indication at Submit (S_SMU_RESTART_FL)	Required System Maintenance Utility to indicate Save Restart info in Submit Mode.	true
Number of Jobs (THREAD_COUNT)	Required number of jobs to start.	1

Major Output

- The result of this job is the loading of Transaction records from the input file. Files are first split and then imported.

During job processing, there are two categories of temporary files (they are deleted upon successful job completion):

- 1.) Split input files
- 2.) Exception report files for each child job.

If any of the child jobs encounter an exception an appropriate exception message is merged into the Exception Report file for the job (specified by name in the job parameters).

- A parameter file is generated for each split XML file, and then the spawned jobs read those input parameter files in a sequential order.

Batch Job Return Codes

The following table shows the potential job return codes for Load & Submit Transactions

Return Code	Condition
Successful (1)	All of the records are loaded into the Transaction Catalog successfully or the input files are empty. All of the transactions loaded were submitted successfully.
Warning (4)	This return code is issued when some of the records failed to load where all other records were loaded successfully.
Non-Fatal Error (8)	None of the records were loaded into the Transaction Catalog.
Failed (12)	<ul style="list-style-type: none"> • Parameters are invalid. • When the input file is not found in the specified directory. • Restart failed because another instance of the Long Term Account Reclassification Chain has already been run successfully. • Runtime exceptions encountered for any unexpected situations. • When the job ends with a return code of Failed, subsequent jobs in the chain is set to inactive.
Terminated (16)	This return code is issued when the job is terminated by the user. When the job ends with a return code of Terminated, subsequent jobs in

Return Code	Condition
	the chain is set to inactive.
System Failure (20)	This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.

Sort Sequence

N/A

Selection Criteria

The input record files (specified in the Job Parameter) are selected.

Problem Resolution

If the process fails for any reason the Multi Threaded Transaction Loader job supports restart functionality. Upon restarting the Multi Threaded Transaction Loader job, the failed job is picked up and run. A checkpoint is maintained for the overall Multi Threaded Transaction Loader job as well as the individual child jobs to identify how far the job successfully executed before failing. Therefore, when the user restarts the failed job the system does not start from the first step of the Multi Threaded Transaction Loader but instead starts processing from the exact point at which it failed.

For example, let's assume that the failed job split the input file in to five child jobs and that the third and the fourth child jobs failed. When restarted only those failed child jobs (that is, the third and the fourth ones) are picked up and processed. The restarted job would not process child jobs one, two or three given they have already completed successfully in the earlier run,

The following table shows the possible return codes and recommendations for each processing step specific to the job in the chain. For general errors and recommendations, refer to the SMU Transaction Upload run sheet in the *Utilities Run Sheet Guide*.

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All transactions were loaded and submitted.	N/A	N/A
Warning (4)	This return code is issued if the job fails to load some of the transactions. Sample Message: Unable to load all of the transactions into the catalog.	Analyze the reason why records failed to load to the Transaction Catalog. When the current run is a re-execution of a previous run (the same input file is used in a new job) this error may be seen because the records that previously loaded successfully will not load again (duplicate entry on the Transaction Catalog is not allowed). If the records failed to	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Possible Return Codes	Condition	Recommendation	Other Instructions
		load to the Transaction Catalog due to any other reason, then analyze the reason, resolve it and schedule a new job.	
Non-Fatal Error (8)	This return code is issued when the job failed to load all of the transactions.	Correct what is most likely a setup issue and restart the spawned SMU job and then restart the load/submit job.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
Failed (12)	In this step, the job can fail under the following conditions: <ul style="list-style-type: none"> • Issues in spawning jobs • Files not found • Runtime exceptions • Parameter Edits 	The reason for the failure needs to be investigated and fixed before restarting the job.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated and fixed before restarting the chain.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated before restarting the chain	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Long Term Account Reclassification Chain: Generate Exception Report

Job Name	Generate Exception Report
Recommended Frequency	See chain job

Single Instance Required	Yes
Can be restarted?	No
Report Generated	Yes. This job generates the following reports: <ul style="list-style-type: none"> • Long Term Account Reclassification Detail Exception Report or • Long Term Account Reclassification Summary Exception Report.

Overview

The final job in the Long Term Account Reclassification chain generates an exception report that lists all of transactions that did not submit to the *Final* Transaction Phase. When run in the detail mode the errors are also listed for each Debt Accounting (DA) and Internal Debt Accounting (IDA) transaction from earlier submit job steps with reference to a line within the transaction.

Transaction rejections are uncommon for this chain, because the same type of activity was recorded in the prior year with the Initial Debt Accounting Chain. However, because that was last year, it is possible. Should the report list a small number of transactions, those can be fixed manually and submitted. Some errors may require the processing of a Debt Modification transaction (LOANM, BONDM, or LEASEM) to change Debt Registry data so future accounting will not also fail. If the number of failures is large, it is still recommended that they be corrected and submitted manually because with an SMU Submit there could be manually-entered DA and IDA transactions that would be processed along with those that rejected. That would not be the case if generated transactions use a separate transaction department code or prefix from those manually entered.

Major Input

- FailedDebtDocExcepReport.txt
- LongTermActgReclass.txt

Batch Parameters

Parameter	Description	Default Value
Parameter File Location (AMSPARM)	Required Parameter Location for the Generate Exception Report Job.	\$\$AMSR00T\$\$/Parms
Chain Parameter File Name (CHAIN_PARM_FILE)	Required Common Chain Parameters File (.txt).	LongTermActgReclass.txt
Exception Report File Name (EXCP_REP_FILE_NM)	Required Exception Report File Names.	FailedDebtDocExcepReport.txt
Exception Report File Location (EXCP_PARM_FILE_LOC)	Exception Parameter File Location for Generate Exception Report Job.	\$\$AMSR00T\$\$/ExportImport/LongTermActgReclass

Major Output

- Long Term Account Reclassification Detail Exception Report when Exception Report Type is 1 (Detailed) in the first job of the Long Term Account Reclassification Chain job.
- Long Term Account Reclassification Summary Exception Report when Exception Report Type is 2 (Summary) in the first job of the Long Term Account Reclassification Chain job.

Batch Job Return Codes

The following table shows the potential job return codes for the individual Generate Exception Report.

Return Code	Condition
Successful (1)	All of the validations are performed successfully and there are no records eligible for exception.
Warning (4)	Not Applicable for this job.
Non-Fatal Error (8)	At least one DA or IDA transaction failed to submit to Final Phase.
Failed (12)	<ul style="list-style-type: none"> • Input parameter file is not found. • Runtime exceptions encountered for any unexpected situations. • Technical failure. When the job ends with a return code of failed, subsequent jobs in the chain is set to inactive.
Terminated (16)	This return code is issued when the job is terminated by the user. When the job ends with a return code of Terminated, subsequent jobs in the chain is set to inactive.
System Failure (20)	This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.

Sort Sequence

N/A

Selection Criteria

N/A

Problem Resolution

Job cannot be restarted in this step. If the job fails a new job should be scheduled after correcting the errors that caused the job to fail.

The following table shows the possible return codes and recommendations for each processing step.

Step 1: Batch Parameter Validation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All batch parameter validations are successful (that is, there are no errors raised during parameter validations.)	N/A	N/A
Warning (4)	N/A	This step does not issue this return code.	N/A
Non-Fatal Error (8)	N/A	This step does not issue this return code.	N/A
Failed (12)	Required parameters are not entered. Sample Message: Parameter file name is not specified.	Enter missing required parameters and schedule a new job. Enter the parameter file name.	N/A
	Entered Parameters are not valid. Sample Message: System Assurance Report Type in Transaction Submit section not found in the parameter file.	Enter valid parameters and schedule a new job. Ensure that a valid System Assurance Report type section exists in the parameter file.	N/A
	Failed because of runtime exceptions caused by unexpected conditions.	Failure reason needs to be investigated before rescheduling the job.	N/A
Terminated (16)	Job is terminated manually by the user.	A new job can be rescheduled.	N/A
System Failure (20)	Job is terminated because of database server or network issues.	Reason for the System Failure needs to be investigated. A new job can be rescheduled.	N/A

Step 2: Exception Report Generation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All DA or IDA transactions submitted to Final transaction phase and the exception report was generated successfully.	N/A.	N/A
Warning (4)	N/A	This step does not issue this return code.	N/A
Non-Fatal Error (8)	At least one DA or IDA failed to submit to Final transaction phase.	N/A	N/A
Failed (12)	Failed because of runtime exceptions caused by	Failure reason needs to be investigated before	N/A

Possible Return Codes	Condition	Recommendation	Other Instructions
	unexpected conditions.	rescheduling the job.	
Terminated (16)	Job is terminated manually by the user.	A new job can be rescheduled.	N/A
System Failure (20)	Job is terminated because of database server or Network issues.	The reason for the System Failure needs to be investigated. A new job can be rescheduled.	N/A

2.1.4 Periodic Debt Accounting Chain

Chain or Job Name	Periodic Debt Accounting Chain
Recommended Frequency	Nightly is recommended or on another frequent basis.
Single Instance Required	Yes
Can be restarted?	Yes
Reports generated	Yes <ul style="list-style-type: none"> • Periodic Debt Accounting Bypassed Records • Periodic Debt Accounting Detail or Summary Exceptions

Overview

The Periodic Debt Accounting Chain has the following jobs. Even though these jobs in the chain can be run individually by disabling other jobs, it is recommended to always run the entire chain.

1. [Periodic Debt Accounting](#)
2. [Load & Submit Transactions](#)
3. [Generate Exception Report](#)

The Periodic Debt Accounting Chain in AMS Advantage Financial is a group of jobs that work together to create accounting transactions that record the Periodic accounting for debt instruments and Schedule Detail combinations. When debt instruments are setup and activated users have a choice to record any periodic accounting manually or allow this chain job to record the accounting.

A special note for record selection pertains to the timeframe where debt records are being entered in the current year that should really be recorded in the prior year. In that timeframe there should be two instances of the chain run. The first should be run with the Output Fiscal Year selection parameter set to the prior year. Other optional date parameters should also be used: Output Accounting Period (12, 13, etc) and the Output Budget Fiscal Year should be the prior year as well. The first run should be followed by one with Output Fiscal Year, Output Accounting Period, and Output Budget Fiscal Year blank or values in the new year specified.

Recording Periodic accounting for debt instruments is often a requirement whether the Periodic Debt Accounting Chain is used or the accounting is recorded manually. Using the chain job is the recommended approach because it enables other chain jobs within Debt Management to make accounting adjustments over the life of a debt instrument. Two or more event types on the Debt Type page control the Periodic accounting performed for loans, leases, and bonds.

Not every record selected will result in transaction creation. Some records are updated by the batch program without creating a transaction. These are listed in the Periodic Debt Accounting Bypassed Records report. Selection logic for that report is later in this run sheet. Presented first is the selection logic for transaction generation. Please note that the chain job will not update records selected for transaction creation. Instead those transactions created will update the debt instrument record when processed to *Final*.

Record Selection

Records selected for processing from the Loan Registry (LOAN), Lease Registry (LEASE), and Bond Registry (BOND) are those where the following general conditions are met:

1. Type of Periodic Accounting batch parameter = **Non-Accrual Accounting** (2) then:
 - Major Type of Debt batch parameter matches the Major Type of Debt for a Debt Instrument or the batch parameter is *All Types*, and
 - Record Initial Accounting flag is *checked* for the Debt Instrument, and
 - Selected Schedule flag is *checked* for the Schedule, and
 - Scheduled Date of the Schedule Detail <= Selection Date Parameter, and
 - Processed On Date is blank, and
 - Schedule Detail Type is Amortization, and
 - One of the following amount fields is > \$0.00: Other Amount 1, Other Amount 2, Other Amount 3, Other Amount 4, or Other Amount 5
 - If the Schedule Detail Type is *Residual Value Adjustment*, and
 - One of the following amount fields is > \$0.00: Principal or Interest
 - If the Schedule Detail Type is *Compounding Interest*, and
 - The following amount fields is > \$0.00: Interest
 - One or more of the following is also evaluated depending on the Major Type of Debt:
 - Loans
 - The Application/Loan Indicator is *Loan* and
 - Debt Instrument Status is *Active Loan*
 - Leases
 - Debt Instrument Status is *Active Lease*
 - Bonds
 - Debt Instrument Status is *Active Bond*
2. Type of Periodic Accounting batch parameter = **Accruals** (1) then:
 - Major Type of Debt batch parameter matches the Major Type of Debt for a Debt Instrument or the batch parameter is *All Types*, and
 - Last Accrual FY and Last Accrual APD are *blank* for the Debt Instrument or
 - Last Accrual FY and Last Accrual APD are prior to the Accrual FY and Accrual APD parameter values, and
 - Selected Schedule flag is checked for the Schedule, and
 - Scheduled Date of the Schedule Detail > the End Date of the Accrual APD parameter (or Selection Date Parameter if specified), and
 - Processed On Date of the Schedule Detail is *blank*, and
 - Schedule Detail Type is Regular Payment, Purchase Payment or Renewal Penalty Payment, and
 - Principal amount field <> \$0.00 and Major Type of Loan on Debt Instrument registry is not equal to *External Taken*, and
 - Interest amount field does not equal \$0.00
 - The following amount fields, if present, are > \$0.00: Other Amount 1, Other Amount 2, Other Amount 3, Other Amount 4, or Other Amount 5

- One or more of the following is done depending on the Major Type of Debt:

Loans

- The Application/Loan Indicator is *Loan*, and
- Debt Instrument Status is *Active Loan*, or
- Debt Instrument Status is *Loan Completed*, and
- Interest Accrual Event Type or Principal Accrual Event Type is populated for the Debt Type of the Debt Instrument, and
- Bill Principal or Bill Interest flag is *checked*.

Leases

- Debt Instrument Status is *Active Lease or Lease Completed*, and
- Interest Accrual Event Type or Principal Accrual Event Type is populated for the Debt Type of the Debt Instrument.

Bonds

- Debt Instrument Status is *Active Bond or Bond Completed*, and
- Interest Accrual Event Type or Principal Accrual Event Type is populated for the Debt Type of the Debt Instrument.
- If the Schedule Type is *Payment in Last Payment with Rate, Fixed, or Compounding Interest* then if the Schedule Detail record previously selected was not the final record with a Schedule Detail Type of *Regular Payment*, then selection continues to find that 'last payment'. Selection will look for the latest such Schedule Detail and accrue the portion of Principal (only) that applies to the accrual period. For Rate and Fixed Interest this means that there are two Schedule Details processed in such a run. For Compounding Interest, it will always be just one Schedule Detail.

When a schedule detail record is selected for either type of accounting, the process will create one of several transaction types based on settings inferred to the Debt Instrument from the Debt Type associated with the instrument. Each transaction created will have at least one accounting line and sometimes more depending on how the debt instrument was setup. Descriptive information about the debt instrument is placed on the header and accounting lines for later recognition. The descriptive information on the accounting line is written to the Accounting Journal for reporting purposes.

One of four types of transactions is created based on the following debt instrument settings:

Loans:

- Debt Accounting (DA) transaction when Major Type of Loan is *External Given (EG)* or *External Taken (ET)*
- Internal Debt Accounting (IDA) transaction when Major Type of Loan is *Internal (IG)*

Leases:

- Debt Accounting transaction (DA)

Bonds:

- Debt Accounting transaction (DA).

The Periodic Debt Accounting process produces two reports. The first report is a Periodic Debt Accounting Bypassed Records report to list all selected Debt Instrument and Schedule Detail combinations that were either set up to bypass Periodic Debt Accounting or had settings that

caused the record to be skipped. The report has several sections that list records under a reason description for why the record was not selected.

- When the bypassed reason is ‘No Amounts to Process’ and Type of Periodic Accounting batch parameter is **Accrual**, the system will directly update the Last Accrual FY and APD fields with the Fiscal Year and Accounting Period parameter values on the debt instrument. This update prevents later runs of the chain from having to re-evaluate the record and continue to list it in the report.
- When the bypassed reason is ‘No Amounts to Process’ and Type of Periodic Accounting batch parameter is **Non-Accrual Accounting**, the system will directly update the Processed On date of the selected schedule detail because no transaction is created to make that update. This update prevents later runs of the chain from having to re-evaluate the record and continue to list it in the report

The second report, the Transaction Exception Report, will list any Debt Accounting (DA) transactions or Internal Debt Accounting (IDA) transactions that failed to submit to the *Final* transaction phase through the Multi-Processor Import job.

Major Input

- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Borrower Information (R_DEBT_BRWR)
- Borrower COA (R_DEBT_BRWRACTG)
- Lender Information (R_DEBT_LNDR)
- Lender COA (R_DEBT_LNDRACTG)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Debt Type (DEBTTYPE / R_DEBT_TYPE)

Major Output

- Internal Debt Accounting transactions (IDA)
- Debt Accounting transactions (DA)
- Periodic Debt Accounting Bypass Records Report
- Periodic Debt Accounting Detail Exception or Periodic Debt Accounting Summary Exception Report
- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Schedule Details (R_DEBT_SCHEDLN)

Chain Job Return Codes

The following table shows the potential return codes for the Periodic Debt Accounting chain job. Note that the chain job will end with the highest return code across all of the jobs.

Return Code	Condition
Successful (1)	All of the jobs end successfully.

Return Code	Condition
Warning (4)	One of the jobs in the chain ends with a return code of Warning.
Non-Fatal Error (8)	One of the jobs in the chain ends with a return code of Non-Fatal Error.
Failed (12)	One of the jobs in the chain ends with a return code of Failed.
Terminated (16)	One of the jobs in the chain ends with a return code of Terminated.
System Failure (20)	One of the jobs in the chain ends with a return code of System Failure

Problem Resolution

If any of the jobs in the chain failed due to application errors it is advisable to restart the job (when possible) after correcting the errors instead of rescheduling the job. Restarting the job will reduce the processing time since the job will resume from where it has last committed and select only the unprocessed records. When restarting is not an option, the entire chain can be run again.

Please refer to the individual jobs for details regarding the specific job processes and problem resolution.

Periodic Debt Accounting Chain: Periodic Debt Accounting

Job Name	Periodic Debt Accounting
Recommended Frequency	See chain job
Single Instance Required	Yes.
Can be restarted?	Yes. See the “Overview” and the “Problem Resolution” section for more details.
Reports Generated	Periodic Debt Accounting Bypassed Records Report

Overview

This first job in the chain performs all record selection, XML file generation, and generates a report of records that did not result in a transaction being created.

This job step consists of following basic steps:

1. **Parameter Validation:** In this step, the process will verify the parameters. If the parameter validation is successful, the job will go to the next step. Otherwise the job will end with a return code of *Failed*.
2. **Processing Debt Instrument Records:** In this step this job will create one or more of the following transactions: Debt Accounting (DA) or Internal Debt Accounting (IDA) transactions based on criteria described in the chain job part of this run sheet. This step then generates an XML file with those transactions with header and line details. There is a separate transaction for each debt instrument. Although not likely invoked, transaction size is governed by MAX_LINE_LIMIT records for CH_DOC_ACTG, IET_DOC_VEND, and IET_DOC_ACTG on the Transaction Required Components (DCREQ) page in the Administration application. When line limit is crossed, the job will create a subsequent transaction (or transactions) with the remaining lines.

3. **Processing Bypassed Records:** This last step creates the Periodic Debt Accounting Bypassed Records Report and updates certain records to prevent future selection. (Please see details of this in the chain job section of the run sheet).

Process Steps	Messages
1. Parameter Validation	<ul style="list-style-type: none"> • Validating Batch Parameters • Each valid parameter is listed followed by any value <ul style="list-style-type: none"> • If Type of Debt is not provided, then “Type of Debt is required” is recorded in the job log. • If Type of Debt is provided but is not equal to 1 or 2 or 3 or 4, then “Invalid value for Type of Debt” is recorded in the job log. • If Record Date is provided and is not valid on Calendar Date (CLDT), then “Record Date is not valid on CLDT” is recorded in the job log. • If Record Date is provided but is not in the correct format (mm/dd/yyyy), then “Record Date not in correct mm/dd/yyyy format” is recorded in the job log. • If Output Fiscal Year (FY) is provided but is not valid on the Fiscal Year page, then “Output FY not valid on FY” is recorded in the job log. • If Output FY is provided but is not in the correct format (yyyy), then “Output FY not in correct yyyy format” is recorded in the job log. • If Output Accounting Period (APD) is provided and Output FY is not provided then “Output FY required when Output APD specified” is recorded in the job log. • If Output FY is not provided and Type of Periodic Accounting is ‘Accrual’ then “Output FY required if Type of Periodic Accounting is Accrual” is recorded in the job log • If Output APD is provided but not valid on the Accounting Period page, then “Output APD not valid on APD” is recorded in the job log • If Output APD is not provided and Type of Periodic Accounting is ‘Accrual’ then “Output APD required if Type of Periodic Accounting is Accrual” is recorded in the job log • If Output APD is not provided and Fiscal Year for the Selection Date is less than the Fiscal Year for the Application Date then “Output APD required when Selection Date is prior year” is recorded in the job log • If Output APD is provided and Accrual APD is provided and Output APD is less than Accrual APD and Type of Periodic Accounting is ‘Accrual’ then “Output APD must be after Accrual APD” is recorded in the job log. • If Output Budget Fiscal Year (BFY) is provided but is not valid on the Fiscal Year page, then “Output BFY

Process Steps	Messages
	<p>not valid on FY” is recorded in the job log.</p> <ul style="list-style-type: none"> • If Output BFY is provided but is not in the correct format (yyyy), then “Output BFY not in correct yyyy format” is recorded in the job log. • If Debt Accounting transaction code is not provided, then “Debt Accounting transaction code is required” is recorded in the job log. • If Debt Accounting transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “Debt Accounting Transaction Code not valid and active on DCTRL for CH transaction type” is recorded in the job log. • If Internal Debt Accounting transaction code is not provided, then “Internal Debt Accounting transaction code is required” is recorded in the job log. • If Internal Debt Accounting transaction code is provided but is not valid and active on Transaction Control (DCTRL), then “Internal Debt Accounting Transaction Code not valid and active on DCTRL for IET transaction type” is recorded in the job log. • If Department code is not provided, then “Department code is required” is recorded in the job log. • If Department code is provided but is not valid and active on Department (DEPT), then “Department code must be valid and active on DEPT” is recorded in the job log. • If Transaction Unit Code is provided but is not valid and active on Unit (UNIT), then “Transaction Unit Code not valid and active on UNIT” is recorded in the job log. • If an Automatic Transaction Numbering (ADNT) record for the Debt Accounting Transaction Code, Transaction Department Code, and Debt Accounting Transaction Prefix cannot be found, then “ADNT entry not found for Debt Accounting Transaction Code” is recorded in the job log. • If an ADNT record for the Internal Debt Accounting Transaction Code, Transaction Department Code, and Internal Debt Accounting Transaction Prefix cannot be found on ADNT, then “ADNT entry not found for Internal Debt Accounting Transaction Code” is recorded in the job log. • If Commit Size is not provided, then “Commit Size defaulted to 1000” is recorded in the job log. • If Commit Size is not a valid integer greater than zero, then “Commit Size must be a positive whole number greater than zero” is recorded in the job log. • If Progression Counter is not provided, then “Progression Counter defaulted to 1000” is recorded in the job log. • If Progression Counter is not a valid integer greater

Process Steps	Messages
	<p>than zero, then “Progression Counter must be a positive whole number greater than zero” is recorded in the job log.</p> <ul style="list-style-type: none"> • If Exception Report Type is not provided, then “Exception Report Type is defaulted to 1” is recorded in the job log. • If Exception Report Type is provided but is not a 1 or 2, then “Exception Report Type must be 1 or 2” is recorded in the job log. • If Type of Periodic Accounting parameter is not provided, then “Type of Periodic Accounting is required” is recorded in the job log. • If Type of Periodic Accounting is provided but is not equal to 1 or 2 then “Type of Periodic Accounting must be 1 or 2” is recorded in the job log. • If Selection Date is provided but is not valid on Calendar Date (CLDT), then “Selection Date is not valid on CLDT” is recorded in the job log. • If Selection Date is provided but not in the correct format (mm/dd/yyyy), then “Selection Date not in correct mm/dd/yyyy format” is recorded in the job log. • If Selection Date is not provided and the Accrual Accounting Period parameter specified is flagged as an Adjustment Period on the APD page with the Accrual Fiscal Year, then “Selection Date required for adjustment Accrual APD” is recorded in the job log. • If Selection Date is provided and the Accrual Accounting Period parameter specified is not flagged as an Adjustment Period on the APD page with the Accrual Fiscal Year, then “Selection Date prohibited for non-adjustment Accrual APD” is recorded in the job log. • If Accrual Fiscal Year (FY) is provided but is not valid on Fiscal Year (FY), then “Accrual FY not valid on FY” is recorded in the job log. • If Accrual FY is provided but is not in the correct format (yyyy), then “Accrual FY not in correct yyyy format” is recorded in the job log. • If Accrual FY is not provided and Type of Periodic Accounting is ‘Accrual’ then “Accrual FY required” is recorded in the job log. • If Accrual FY is provided and Type of Periodic Accounting is ‘Non-Accrual Accounting’ then “Accrual FY prohibited” is recorded in the job log. • If Accrual Accounting Period (APD) is not provided and Type of Periodic Accounting is ‘Accrual’ then “Accrual APD required” is recorded in the job log • If Accrual APD is provided but is not valid on Accounting Period (APD), then “Accrual APD not valid

Process Steps	Messages
	<p>on APD” is recorded in the job log.</p> <ul style="list-style-type: none"> • If Accrual APD is provided and Type of Periodic Accounting is ‘Non-Accrual Accounting’ then “Accrual APD prohibited” is recorded in the job log. • If AMSEXPOR is not provided, then “The AMSEXPOR Parameter File cannot be empty” is recorded in the job log. • If AMSEXPOR is not a valid directory, then “The value entered in the AMSEXPOR parameter is not a valid directory” is recorded in the job log. • If AMSPARM is not provided, then “The AMSPARM Parameter File cannot be empty” is recorded in the job log. • If AMSPARM parameter is not a valid directory, then “The value entered in the AMSPARM parameter is not a valid directory” is recorded in the job log. • Parameter validation completed.
<p>2. Processing Debt Instrument Records</p>	<ul style="list-style-type: none"> • Start Schedule Detail record selection • End Schedule Detail record selection • Processing eligible schedule detail records • Processing eligible Schedule Detail records completed. • Depending of progression Counter size the “<<Progression Count>> Schedule Detail record(s) are processed” is displayed in log • Total <<TOTAL COUNT>> Schedule Detail record(s) processed • Total <<IDADOCOUNT>> Internal Debt accounting transactions are created for Schedule Detail records • Total <<DADOCOUNT>> Debt accounting transactions are created for Schedule Detail records
<p>3. Processing Bypassed Records</p>	<ul style="list-style-type: none"> • Start Bypass record selection for generating Bypass Report • End Bypass record selection for generating Bypass Report • Processing the selected records • Depending of progression Counter size the “<<Progression Count>> Bypass Selection Record(s) report processed” is displayed in log. • Total <<Bond Total Count>> Bond Bypass Selection Record(s) report processed • Total <<Lease Total Count>> Lease Bypass Selection Record(s) report processed • Total <<Loan Total Count>> Loan Bypass Selection Record(s) report processed • Processing completed

Restartability Information

This job step is implemented with checkpoints that begin after parameter validation. If the process fails for any reason (such as the network is down or the server is down), then the process can restart from the last point where it stopped.

If the job fails in any of the above steps after #1 - Parameter Validation; it can be restarted by resolving the errors. Any job failed during parameter validations would not be restarted. If the job is restarted, it will start from the step where it failed earlier and will not start from the beginning. For example, the job failed in the step Bypassed Records report due to some fatal condition (that is, table space error). If the job is restarted after resolving the table space issue, the job will start from the step Bypassed Records report and not from the selection and processing of Debt Instrument records.

Instead of restarting the job, if a new job is scheduled with the same set of parameters after resolving the table space issue, the job will start from the first step.

The restart will fail if another instance of this job has been scheduled and ran successfully before restarting the failed job.

Minor Input

Tables

- Application Parameters (APPCTRL / IN_APP_CTRL: APPL_SYS_DT)
- Calendar Date (CLDT / R_CLDT) – Current FY for Application Date
- Accounting Period (APD / R_APD) – Determines start and end dates of the accounting period

Major Input

Tables

- Debt Instrument Registry (BOND, LOAN, LEASE / R_DEBT_DEBTINST)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Borrower Information (R_DEBT_BRWR)
- Borrower COA (R_DEBT_BRWRCTG)
- Lender Information (R_DEBT_LNDR)
- Lender COA (R_DEBT_LNDRCTG)
- Debt Type (DEBTTYPE / R_DEBT_TYPE)

Batch Parameters

Parameter	Description	Default Value
Accrual Fiscal Year (ACRL_FY)	Conditionally required Accrual Fiscal Year on generated Transactions. Enter as YYYY. Required when Type of Periodic Accounting is Accruals	No default

Accrual Period (ACRL_PER)	Conditionally required Accrual APD for Accrual selection & output on generated Transactions. Required when Type of Periodic Accounting is Accruals	No default
Export Directory (AMSEXPORT)	Required location where XML file is written. If left blank the system default is used.	\$\$AMSR00T\$\$/ExportIm port
Parameter Directory (AMSPARM)	Required location where the load and submit parameter files is written for later job steps. If left blank the system default is used.	\$\$AMSR00T\$\$/Parms
Chain Parameter File Name (CHAIN_PARM_FILE)	Required name identifying the common chain parameter file (.txt)	PeriodicDebtAccounting.txt
Client Name (CLIENT_NM)	Optional client name for reports created.	No default
Commit Block Size (COMMIT_SIZE)	Required commit block size for performance tuning. If left blank, 1000 is assumed.	1000
Debt Accounting Transaction Code (DA_DOC_CD)	Required CH transaction code	DA
Debt Accounting Prefix (DA_DOC_PFX)	Optional Debt Accounting Transaction Prefix	No default
Department (DOC_DEPT_CD)	Required Department for all transactions	No default
Record Date (DOC_REC_DT)	Optional transaction record date to be populated on generated transactions when the current application date is not desired. Enter as MM/DD/YYYY.	No default
Unit (DOC_UNIT_CD)	Optional Unit code for all transactions	No default
Exception Report Type (EXCP_RPT_TYP)	Required Exception Report Type (1=Detailed, 2=Summarized, if not entered then defaulted to Detailed)	1
Internal Debt Accounting Transaction Code (IDA_DOC_CD)	Required IET transaction code to be used on internal loans.	IDA
Internal Debt Accounting Prefix	Optional prefix used in the generation of transaction IDs for IET	No default

(IDA_DOC_PFX)	transactions.	
Amortization and Reversing Budget Fiscal Year (OTPT_BFY)	Optional parameter for an Output Budget FY on generated Transactions. Enter as YYYY. When specified, BFY is used for all Non-Accrual Accounting Lines and on the Reversing Accrual Accounting Lines.	No default
Amortization and Reversing Fiscal Year (OTPT_FY)	Optional parameter for an Output Fiscal Year for all Non-Accrual Accounting Lines. Required when performing Accruals and used for Reversing Accrual Accounting Lines. Enter as YYYY.	No default
Amortization and Reversing Period (OTPT_PER)	Optional parameter for an Output Accounting Period for all Non-Accrual Accounting Lines. Required when performing Accruals and used for Reversing Accrual Accounting Lines.	No default
Progression Counter Size (PROG_COUNTER_SIZE)	Required Progression Counter to control informational messages about processing throughput.	1000
Selection Date (SEL_DT)	Optional parameter for schedule detail record selection when the application date is not desired for Non-Accrual Accounting. Enter as MM/DD/YYYY. Required when performing Accruals and the Accrual APD parameter specified is flagged as an Adjustment Period on the APD page. Prohibited when Type of Periodic Accounting is Accruals and Accrual Accounting Period parameter specified is not flagged as an Adjustment Period on the APD page with the Accrual Fiscal Year.	No default
Major Type of Debt (TYP_OF_DEBT)	Required Type of Debt for selection: 1 – Bonds only, 2 – Leases only, 3 – Loans only, and 4 – All Types	4
Type of Periodic Accounting (TYP_PER_ACTG)	Required indication of the type of accounting performed: 1 – Accruals or 2 - Non-Accrual Accounting	No default

Major Output

- BondDocuments.xml (XML file for Bonds transactions)

- LeaseDocuments.xml (XML file for Lease transactions)
- LoanDocuments.xml (XML file for Loan transactions)
- Schedule (R_DEBT_SCHED)
- Schedule Details (R_DEBT_SCHEDLN)
- Periodic Debt Accounting Bypass Records Report
- PeriodicDebtAccounting.txt

Batch Job Return Codes

The following table shows the potential job return codes for the Periodic Debt Accounting job.

Return Code	Condition
Successful (1)	All the selected records are processed successfully.
Warning (4)	No eligible records found.
Non-Fatal Error (8)	N/A
Failed (12)	<p>The job will fail under the following conditions:</p> <ul style="list-style-type: none"> • Parameters are invalid. • Run time exceptions for unexpected situations. <p>When this job ends with a return code of Failed, subsequent jobs in the chain is set to inactive.</p>
Terminated (16)	<p>This return code is issued when the job is terminated by the user. When this job ends with a return code of Terminated subsequent jobs in the chain is set to inactive.</p>
System Failure (20)	<p>This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.</p>

Sort Sequence

Processing Debt instrument Records

Major Type of Debt, Debt Instrument ID, Schedule Number, Schedule Line

Bypassed Records Report

Major Type of Debt, Debt Instrument ID, Schedule Number, Schedule Line

Selection Criteria

Processing Debt instrument Records

Records selected for processing from the Loan Registry (LOAN), Lease Registry (LEASE), and Bond Registry (BOND) are those where the following general conditions are met:

1. Type of Periodic Accounting batch parameter = **Non-Accrual Accounting** (2) then:

- Major Type of Debt batch parameter matches the Major Type of Debt for a Debt Instrument or the batch parameter is *All Types*, and
- Record Initial Accounting flag is *checked* for the Debt Instrument, and
- Selected Schedule flag is *checked* for the Schedule, and
- Scheduled Date of the Schedule Detail <= Selection Date Parameter, and
 - Processed On Date is *blank*, and
 - Schedule Detail Type is *Amortization*, and
 - One of the following amount fields is > \$0.00: Other Amount 1, Other Amount 2, Other Amount 3, Other Amount 4, or Other Amount 5
 - If the Schedule Detail Type is *Residual Value Adjustment*, and
 - One of the following amount fields is > \$0.00: Principal or Interest
 - If the Schedule Detail Type is *Compounding Interest*, and
 - The following amount fields is > \$0.00: Interest
- One or more of the following is also evaluated depending on the Major Type of Debt:

Loans

- The Application/Loan Indicator is *Loan* and
- Debt Instrument Status is *Active Loan*

Leases

- Debt Instrument Status is *Active Lease*

Bonds

- Debt Instrument Status is *Active Bond*

2. Type of Periodic Accounting batch parameter = **Accruals** (1) then:

- Major Type of Debt batch parameter matches the Major Type of Debt for a Debt Instrument or the batch parameter is *All Types*, and
- Last Accrual FY and Last Accrual APD are *blank* for the Debt Instrument, or
- Last Accrual FY and Last Accrual APD are prior to the Accrual FY and Accrual APD parameter values, and
- Selected Schedule flag is checked for the Schedule, and
- Scheduled Date of the Schedule Detail > the End Date of the Accrual APD parameter (or Selection Date Parameter if specified), and
 - Processed On Date of the Schedule Detail is *blank*, and
 - Schedule Detail Type is Regular Payment, Purchase Payment or Renewal Penalty Payment, and
 - Principal Amount field > \$0.00 and Major Type of Loan on Debt Instrument registry is not equal to *External Taken*, and
 - One of the following amount fields is > \$0.00: Interest, Other Amount 1, Other Amount 2, Other Amount 3, Other Amount 4, or Other Amount 5
- One or more of the following is done depending on the Major Type of Debt:

Loans

- The Application/Loan Indicator is *Loan*, and
- Debt Instrument Status is *Active Loan* or *Loan Completed*, and
- Interest Accrual Event Type is populated for the Debt Type of the Debt Instrument

Leases

- Debt Instrument Status is *Active Lease* or *Lease Completed*, and
- Interest Accrual Event Type is populated for the Debt Type of the Debt Instrument

Bonds

- Debt Instrument Status is *Active Bond* or *Bond Completed*, and
- Interest Accrual Event Type is populated for the Debt Type of the Debt Instrument

Bypassed Records Report

No Amount Process

- All amount fields are *\$0.00*

Period already accrued

- Type of Periodic Accounting parameter is *Accruals*
- Last Accrual FY and APD values for Debt Instrument are \geq the Accrual FY and Accrual APD parameters

Debt Instrument Status Is Manually Closed

- Type of Periodic Accounting parameter is *Non-Accrual Accounting* and
- Depending on Major Type of Debt:

Loans

- Debt Instrument Status is *Loan Manually Closed*

Leases

- Debt Instrument Status is *Lease Manually Closed*

Bonds

- Debt Instrument Status is *Bond Manually Closed*

Problem Resolution

The following table shows the possible return codes and recommendations for each processing step.

Step 1: Parameter Validation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	Successful	N/A	N/A
Warning (4)	This step does not issue this return code.	N/A	N/A
Non-Fatal Error (8)	This step does not issue this return code.	N/A	N/A
Failed (12)	Required Parameters are not entered Sample Message: Department Code is Required.	Schedule a new job by passing required and valid parameter values.	N/A
	Failed because of runtime exceptions for an unexpected situation.	The reason for the failure needs to be investigated before scheduling a new job.	N/A
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated before scheduling a new job.	N/A
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated and resolved before scheduling a new job.	N/A

Step 2: Processing Debt instrument Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All of the selected records are processed successfully.	N/A	N/A
Warning (4)	No eligible records were found on the tables for processing.	N/A	N/A
Non-Fatal Error (8)	This step does not issue this return code.	N/A	N/A
Failed (12)	Job failed due to Fatal conditions.	In this step, the job can fail under the following two conditions. 1) Encounters any	Schedule a new job or restart the job.

Possible Return Codes	Condition	Recommendation	Other Instructions
		runtime exceptions and 2) Failed during restart. If the job fails because of the runtime exceptions, investigate the exception reported by the process, resolve the error and restart the job.	
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Step 3: Processing Bypassed Records

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	The Bypassed Record report generated successfully.	N/A	N/A
Warning (4)	This step does not issue this return code.	N/A	N/A
Non-Fatal Error (8)	Some of the processed records are written to Bypassed Records Report because they exceed the max line limit defined on DCREQ.	N/A	N/A

Failed (12)	Failed due to issues in creating the report.	Investigate and fix the reason the report was not created before restarting the chain.	N/A
	Failed because of runtime exceptions for an unexpected situation.	Investigate and fix the reason the report was not created before restarting the chain.	N/A
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated. A new job can be scheduled	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated. A new job can be scheduled.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Periodic Debt Accounting Chain: Load & Submit Transactions

Job Name	Load & Submit Transactions
Recommended Frequency	See chain job
Single Instance Required	Yes
Can the job be restarted?	Yes. Please see the “Problem Resolution” section for Details.
Reports generated	No

Overview

This job starts by first validating the batch parameters. If the parameters are valid, then it loads the records from the XML file(s) generated by the Periodic Debt Accounting job into the Transaction Catalog. This job uses the MultiProcessImport feature to load and submit the transactions created in the XML file from the first job step. If the parameters are not valid, the job issues appropriate messages and ends with a status of *Failed*.

Major Input

- BondDocuments.xml
- LeaseDocuments.xml
- LoanDocuments.xml

Process Steps	Messages
Parameter Validation	<ul style="list-style-type: none"> • Validating Batch Parameters • Each valid parameter is listed followed by any value • If the Thread Count is not a valid integer then “Invalid value received for parameter THREAD_COUNT (expected number): ##” is recorded in the job log. • If the Thread Count is not a valid integer > 0 then “The valid job thread count starts with 1. Receive value: ##” is recorded in the job log. • If the Mode is not provided then “MODE parameter cannot be left blank (expected values 1, 2, or 3)” is recorded in the job log. • If the Mode is provided and mode is not => 1 and not =< 3 then “Invalid value received for parameter MODE (expected values 1, 2, or 3): ##” is recorded in the job log. • If the Commit Block Size is not a valid integer > 1 then “Invalid value received for parameter COMMIT_BLOCK_SIZE (expected value >1): ##” is recorded in the job log. • If the Block Size is not a valid integer > 1 then “Invalid value received for parameter BLOCK_SIZE (expected value >1): ##” is recorded in the job log. • If the Polling Frequency is a valid integer and < 5 then “Invalid value received for parameter SLEEP_INTERVAL (expected value >=5): ##” is recorded in the job log. • If the Logging Frequency is a valid integer and less than 30 then “Invalid value received for parameter LOG_STATUS_INTERVAL (expected value >= 30): ##” is recorded in the job log. • If the Catalog ID of the System Maintenance Utility job is not a valid integer greater than one then “Invalid value received for parameter SMU_CTLG_ID (expected value >1): ##” is recorded in the job log. • If the Other Action is not provided and run mode is 3, then “Other Action is required when run on mode 3” is recorded in the job log. • If the Other Action is provided and run mode is 1 or 2 then “Other Action is valid only for Mode 3” is recorded in the job log. • If the location of the source file of records is not a valid directory, then “Invalid value read for parameter FILE_INPUT_DIR (expected value = a valid directory): ####” is recorded in the job log. • If the Stagger Time is not a valid integer > 1 then “Invalid value received for parameter STAGGER_TIME (expected

Process Steps	Messages
	<p>value >1): ##" is recorded in the job log.</p> <ul style="list-style-type: none"> • If the Comma Separated list of input XML files is not provided then "No input file to process" is recorded in job log. • If the Comma Separated list of input XML files is provided and a file does not exist or does not end with xml then "Invalid / non-existing file input part in value for parameter FILE_LIST (expected value = a valid list if file):####" is recorded in job log. • If the Output Location for the file segments is not a valid directory then "Invalid value read for parameter FILE_OUTPUT_DIR (expected value = a valid directory):####" is recorded in the job log. • Parameter validation completed
Multiple Job Processing	<ul style="list-style-type: none"> • Setting up job for parameter file: (Parameter Location path)\Parm_#####_#.txt • Enabled job with Id=##### • Created Job ##### for Parm file (Export Import directory path)\Parm_#####_#.txt • (Repeated for each file and job combination) • Committed child jobs • Child job pending count:# Job Id[#####] Status=X • (Repeated for each job) • Deleting part exception file: (Export Import directory path)\FailedDebtDocExcepReport_#####_#.txt • (Repeated for each file) • Deleting split input XML file: (Export Import directory path)\BondsDocuments_#####_#.xml, • LeasesDocuments_#####_#.xml • LoanDocuments_#####_#.xml • (Repeated for each file) • Run Ended

Batch Parameters

Parameter	Description	Default Value
XML Transaction Limit (BLOCK_SIZE)	Optional block size for the number of transactions to be split out into files. If left blank, 1 is the default. Set this performance parameter to a value that will split an XML file into individual files sufficient for timely processing.	1
Commit Block Size (COMMIT_BLOCK_)	Optional number of records to commit at a time. If left blank, the ADV30Parms.ini file will supply a value.	10

SIZE)		
Input File Directory (FILE_INPUT_DIR)	Required location of the source file of records.	\$\$AMSROOT\$\$/ExportImport/PaymentBilling
Input File Listing (FILE_LIST)	Required comma separated list of input XML files to load.	BondDocuments.xml, LeaseDocuments.xml, LoanDocuments.xml
Output File Directory (FILE_OUTPUT_DIR)	Required output location for the file segments.	\$\$AMSROOT\$\$/ExportImport/PaymentBilling
File Prefix (FILE_PREFIX)	Optional file prefix for Parameter and Data Files created by jobs.	No default
Apply Overrides at Import (I_SMU_APPLY_OVERRIDES)	Required System Maintenance Utility flag to indicate Apply Overrides in Import Mode.	true
Bypass Approvals at Import (I_SMU_BYPASS_APPROVAL)	Required System Maintenance Utility flag to indicate Bypass Approvals in Import Mode.	false
Bypass ADNT at Import (I_SMU_BYPS_ADNT_FL)	Required System Maintenance Utility flag to indicate Bypass ADNT in Import Mode.	true
Import Status (I_SMU_DOC_STAT_CD)	Required System Maintenance Utility Transaction Status for Import Mode.	2
Override Level at Import (I_SMU_OVERRIDE_LVL)	Optional System Maintenance Utility Override Level for Import Mode. If 0 or left blank and the Apply Overrides parameter is <i>true</i> then the level of the user executing the chain job is used.	No default
Restart Indication at Import (I_SMU_RESTART_FL)	Required System Maintenance Utility flag to indicate Save Restart info in Import Mode.	true
Logging Frequency (LOG_STATUS_INTERVAL)	Required logging frequency (in seconds) for controller thread reporting status of child threads to the system log.	300
SMU Mode (MODE)	Required mode (1 = Import only, 2 = Import & Submit, 3 = Import, Other Action, and Submit).	2
Polling Frequency (SLEEP_INTERVAL)	Required polling frequency (in seconds) for internal controller thread for checking child processes.	5
SMU Catalog ID	Required Catalog ID of the System	3

(SMU_CTLG_ID)	Maintenance Utility job that is spawned as the child process.	
Lag Time (STAGGER_TIME)	Required lag time in seconds between the spawning of each child process.	30
Apply Overrides at Submit (S_SMU_APPLY_OVERRIDES)	Required System Maintenance Utility flag to indicate Apply Overrides in Submit Mode.	true
Bypass Approval at Submit (S_SMU_BYPASS_APPROVAL)	Required System Maintenance Utility flag to indicate Bypass Approvals in Submit Mode.	false
Exception Report File Name (S_SMU_EXCEP_REP_FILE_NM)	Required System Maintenance Utility Exception File for Submit Mode.	FailedDebtDocExcepReport.txt
Exception Report Indication (S_SMU_EXCEP_REP_IND)	Required System Maintenance Utility Exception Report Indicator for Submit Mode. Values are: 1 = Detailed, 2 = Failed Transactions, 3 = Processed Transactions, 4 = Failed Transaction Lines, and 5 = Transaction Status.	4
Submit Severity Flag (S_SMU_EXP_SEV_FL)	Optional System Maintenance Utility flag to indicate the Severity Flag in Submit Mode.	1
Override Level at Submit (S_SMU_OVERRIDE_LVL)	System Maintenance Utility Override Level for Submit Mode. If 0 or left blank and the Apply Overrides parameter is <i>true</i> then the level of the user executing the chain job is used.	
Restart Indication at Submit (S_SMU_RESTART_FL)	Required System Maintenance Utility to indicate Save Restart info in Submit Mode.	true
Number of Jobs (THREAD_COUNT)	Required number of jobs to start.	1

Major Output

- The result of this job is the loading of Transaction records from the input file. Files are first split and then imported.
- During job processing there are two categories of temporary files (they are deleted upon successful job completion):
 - 1.) Split input files
 - 2.) Exception report files for each child job.

- If any of the child jobs encounter an exception an appropriate exception message is merged into the Exception Report file for the job (specified by name in the job parameters).
- A parameter file is generated for each split XML file, and then the spawned jobs read those input parameter files in a sequential order.

Batch Job Return Codes

The following table shows the potential job return codes for the Load & Submit Transactions job.

Return Code	Condition
Successful (1)	All of the records are loaded into the Transaction Catalog successfully or the input files are empty. All of the transactions loaded were submitted successfully.
Warning (4)	This return code is issued when some of the records failed to load where all other records were loaded successfully.
Non-Fatal Error (8)	None of the records get loaded into the Transaction Catalog.
Failed (12)	<ul style="list-style-type: none"> • Parameters are invalid. • When the input file is not found in the specified directory. • Restart failed because another instance of the Periodic Debt Accounting Chain has already been run successfully. • Runtime exceptions encountered for any unexpected situations. When the job ends with a return code of Failed, subsequent jobs in the chain is set to inactive.
Terminated (16)	This return code is issued when the job is terminated by the user. When the job ends with a return code of Terminated, subsequent jobs in the chain is set to inactive.
System Failure (20)	This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.

Sort Sequence

N/A

Selection Criteria

The input record files (specified in the Job Parameter) are selected.

Problem resolution

If the process fails for any reason the Multi Threaded Transaction Loader job supports restart functionality. Upon restarting the Multi Threaded Transaction Loader job, the failed job is picked up and run. A checkpoint is maintained for the overall Multi Threaded Transaction Loader job as well as the individual child jobs to identify how far the job successfully executed before failing. Therefore, when the user restarts the failed job the system does not start from the first step of the Multi Threaded Transaction Loader but instead starts processing from the exact point at which it failed.

For example, let's assume that the failed job split the input file in to five child jobs and that the third and the fourth child jobs failed. When restarted only those failed child jobs, that is, the third and the fourth ones are picked up and processed. The restarted job would not process child jobs one, two or three given they have already completed successfully in the earlier run

The following table shows the possible return codes and recommendations for each processing step specific to the job in the chain. For general errors and recommendations, refer to the SMU Transaction Upload run sheet in the *AMS Advantage Financial – Utilities Run Sheet Guide*.

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All transactions were loaded and submitted.	N/A	N/A
Warning (4)	This return code is issued when the job fails to load some of the transactions. Sample Message: Unable to load all of the transactions into the catalog.	Analyze the reason why records failed to load to the Transaction Catalog. When the current run is a re-execution of a previous run (the same input file is used in a new job) this error may be seen because the records that previously loaded successfully will not load again (duplicate entry on the Transaction Catalog is not allowed). If the records failed to load to the Transaction Catalog due to any other reason, then analyze the reason, resolve it and schedule a new job.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
Non-Fatal Error (8)	This return code is issued when the job failed to load all of the transactions.	Correct what is most likely a setup issue and restart the spawned SMU job and then restart the load/submit job.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
Failed (12)	In this step, the job can fail under the following conditions: <ul style="list-style-type: none"> • Issues in spawning jobs • Files not found • Runtime exceptions • Parameter Edits 	The reason for the failure needs to be investigated and fixed before restarting the job.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Possible Return Codes	Condition	Recommendation	Other Instructions
Terminated (16)	Job is terminated manually by the user.	The reason for the termination needs to be investigated and fixed before restarting the chain.	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.
System Failure (20)	When the job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated before restarting the chain	If another instance of the job has already been scheduled and ran successfully, then this job should not be restarted – only a new job should be scheduled.

Periodic Debt Accounting Chain: Generate Exception Report

Job Name	Generate Exception Report
Recommended Frequency	See chain job
Single Instance Required	Yes
Can be restarted?	No
Report Generated	Yes: <ul style="list-style-type: none"> • Periodic Debt Accounting Detail Exception Report or • Periodic Debt Accounting Summary Exception Report

Overview

The final job in the Periodic Debt Accounting Chain generates an exception report that lists all of the transactions that did not submit to the *Final* Transaction Phase. When run in the detail mode the errors are also listed for each Debt Accounting (DA) and Internal Debt Accounting (IDA) transaction from earlier submit job steps with reference to a line within the transaction.

Major Input

- FailedDebtDocExcepReport.txt
- PeriodicDebtAccounting.txt

Batch Parameters

Parameter	Description	Default Value
Parameter File Location (AMSPARM)	Required Parameter Location for Generate Exception Report Job	\$\$AMSROOT\$\$/Parms
Chain Job Parameter File (CHAIN_PARM_FILE)	Required Common Chain Parameters File (.txt)	PeriodicDebtAccounting.txt
Exception Report File Name (EXCP_REP_FILE_NM)	Required Exception Report File Names	FailedDebtDocExcepReport.txt
Exception Report File Location (EXCP_PARM_FILE_LO C)	Required Exception Parameter File Location for Generate Exception Report Job	\$\$AMSROOT\$\$/ExportImport/PeriodicDebtAccounting

Major Output

- Periodic Debt Accounting Detail Exception Report when Exception Report Type is 1 (Detailed) in the 1st job of the Periodic Debt Accounting Chain job
- Periodic Debt Accounting Summary Exception Report when Exception Report Type is 2 (Summary) in the 1st job of the Periodic Debt Accounting Chain job

Batch Job Return Codes

The following table shows the potential job return codes for the individual Generate Exception Report.

Return Code	Condition
Successful (1)	All of the validations are performed successfully and there are no records eligible for exception.
Warning (4)	Not Applicable for this job.
Non-Fatal Error (8)	At least one DA or IDA transaction failed to submit to Final Phase.
Failed (12)	<ul style="list-style-type: none"> • Input parameter file is not found. • Runtime exceptions encountered for any unexpected situations. • Technical failure. When the job ends with a return code of failed, subsequent jobs in the chain is set to inactive.
Terminated (16)	This return code is issued when the job is terminated by the user. When the job ends with a return code of Terminated, subsequent jobs in the chain is set to inactive.
System Failure (20)	This return code is issued when the job is terminated because of database server or network issues. When this job ends with a return code of System Failure, subsequent jobs in the chain is set to inactive.

Sort Sequence

N/A

Selection Criteria

N/A

Problem Resolution

Job cannot be restarted in this step. If the job fails a new job should be scheduled after correcting the errors that caused the job to fail.

The following table shows the possible return codes and recommendations for each processing step.

Step 1: Batch Parameter Validation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All batch parameter validations are successful (that is, there are no errors raised during parameter validations).	N/A	N/A
Warning (4)	N/A	This step does not issue this return code.	N/A
Non-Fatal Error (8)	N/A	This step does not issue this return code.	N/A
Failed (12)	Required parameters are not entered. Sample Message: Parameter file name is not specified	Enter missing required parameters and schedule a new job. Enter the parameter file name.	N/A
	Entered Parameters are not valid Sample Message: System Assurance Report Type in Transaction Submit section not found in the parameter file	Enter valid parameters and schedule a new job. Ensure that a valid System Assurance Report type section exists in the parameter file.	N/A
	Failed because of runtime exceptions caused by unexpected conditions.	Failure reason needs to be investigated before rescheduling the job.	N/A
Terminated (16)	Job is terminated manually by the user.	A new job can be rescheduled.	N/A
System Failure (20)	Job is terminated because of database server or network issues.	The reason for the System Failure needs to be investigated. A new job can be rescheduled.	N/A

Step 2: Exception Report Generation:

Possible Return Codes	Condition	Recommendation	Other Instructions
Successful (1)	All DA or IDA transactions submitted to Final transaction phase and the exception report was generated successfully.	N/A.	N/A
Warning (4)	N/A	This step does not issue this return code.	N/A
Non-Fatal Error (8)	At least one DA or IDA failed to submit to the Final transaction phase.	N/A	N/A
Failed (12)	Failed because of runtime exceptions caused by unexpected conditions.	The failure reason needs to be investigated before rescheduling the job.	N/A
Terminated (16)	Job is terminated manually by the user.	A new job can be rescheduled.	N/A
System Failure (20)	Job is terminated because of database server or Network issues.	The reason for the System Failure needs to be Investigated. A new job can be rescheduled.	N/A