



ABBOTT LABORATORIES

SCM – CLASS A, SUPPLY THREAD

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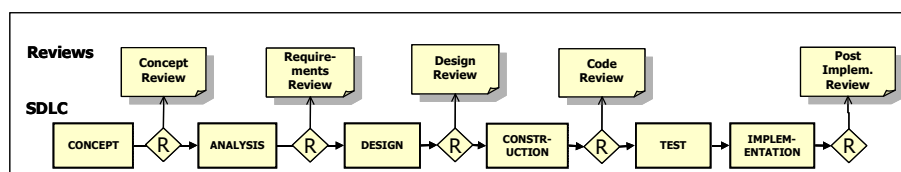
ROLLUP MATERIAL REQUIREMENT PLAN (MRP)

DESIGN SPECIFICATION

Author: Linda Muterspaugh

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Purpose of this Document

The purpose of the Design Specification is to describe how the requirements defined in the Requirements Definition will be translated into a functional system. The Design Specification describes “how” the proposed solution will work. The document's audience is the Business Systems or technical community, not the solution's business users.

Revision History

Version	Date	Author	Description of Changes:
1.0	April 25, 2025	Linda Muterspaugh	Initial Release

Related Documents

List any previously created project documentation that was used to produce this deliverable.

Title of Document	Location	Version	Date	Author



DOCUMENT APPROVALS

Project Name: **SCM – Class A**

Deliverable: **Design Specification**

Prepared by:

Linda Muterspaugh
Consulting Technical Writer

Date
4/4/2004

Approvals:

Tom Barnstable
AI IT Manager, Dept 0630

Date

Azeem U. Ahmed
Team Lead, Supply Thread

Date

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1. INTRODUCTION

The STG_MRP_DTL table stores the Material Requirement Plan created by the manufacturing affiliate during the monthly Global S&OP process. The MRP covers the affiliate's chosen items and can be viewed and analyzed through the ONEview reports.

This document describes the process of:

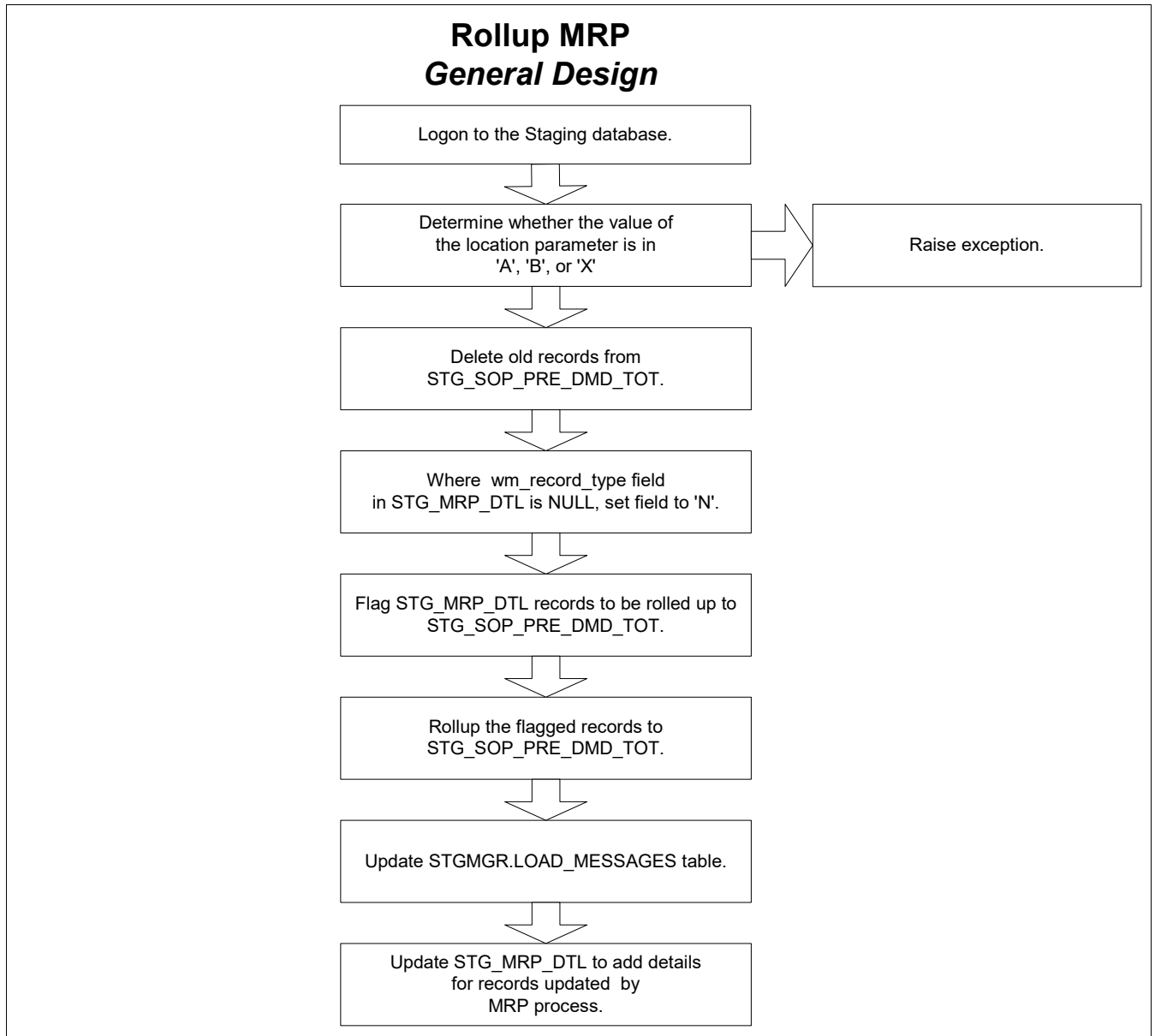
- Rolling up records from the STG_MRP_DTL table to the STG_SOP_PRE_DMD_TOT table.
- Updating the STG_MRP_DTL table to show the updated records.

2. SYSTEM ARCHITECTURE

For a description of the system architecture, see the document *System Architecture*.

3. GENERAL DESIGN & PROGRAM HIERARCHY

The section shows the overall program hierarchy and major operations performed by the process.



4. DATABASE DESIGN

This section details the information specific to a relational database. It includes the table and column definitions, field lengths, and default database values.

4.1. DATABASE OBJECTS

This section defines data entities that will be used for the proposed system. Relationships between the elements are also documented. Each data element is listed by name and includes a specification of data type and field length. The major entity is called a “table,” and the descriptors used for that table are called “columns”.



4.1.1. TABLES

The following section shows the detailed table information, including the table names, column names, column data types, and the primary keys.

STGMGR.STG_MRP_DTL table description (source and target).

Attribute/Column Name	Column Type	PK Indicator	Nullable	Comments
ITEM_NO	VARCHAR2(30)	1	N	
SOURCE_LOC	VARCHAR2(10)	2	N	
SHIP_TO	VARCHAR2(10)	3	N	
REQUIRED_DATE	DATE(7)	4	N	
SCHEDULE_STATUS	VARCHAR2(10)	5	N	
QTY	FLOAT(22)		N	
ORIG_ITEM_NO	VARCHAR2(30)		Y	
REC_ID	VARCHAR2(15)		Y	
REC_NUM	FLOAT(22)		Y	
EDIT_CK_OK	VARCHAR2(1)		Y	
EDIT_CODE	VARCHAR2(30)		Y	
EDIT_ERR_TYPE	VARCHAR2(30)		Y	
EDIT_ERR_CNT	FLOAT(22)		Y	
AFF_INS_USER	VARCHAR2(30)		Y	
AFF_INS_DATE_TIME	DATE(7)		Y	
BT_EDIT_USER	VARCHAR2(30)		Y	
BT_EDIT_DATE_TIME	DATE(7)		Y	
BT_MAINT_USER	VARCHAR2(30)		Y	
BT_MAINT_DATE_TIME	DATE(7)		Y	
WM_LAST_UPD_BY	VARCHAR2(30)		N	
WM_CREATED_BY	VARCHAR2(30)		N	
WM_LAST_UPD_DATE	DATE(7)		N	
WM_CREATION_DATE	DATE(7)		N	
WM_RECORD_TYPE	VARCHAR2(10)		Y	
HQ_EDIT_DATE	DATE(7)		N	
HQ_EDIT_PROCESS_ID	VARCHAR2(10)		N	
HQ_ERROR_CODE	VARCHAR2(200)		N	
HQ_ERROR_COUNT	FLOAT(22)		N	
HQ_STATUS	VARCHAR2(10)		N	

STSC.LOC SCPO table description (source).

Attribute/Column Name	Column Type	PK Indicator	Nullable	Comments
LOC	VARCHAR2(10)		N	
DESCR	VARCHAR2(50)		N	
OHPOST	DATE		N	
FRZSTART	DATE		N	
SCEN	INTEGER		N	
SCENBITS	INTEGER		N	
SOURCECAL	VARCHAR2(18)		N	
DESTCAL	VARCHAR2(18)		N	
TYPE	INTEGER		N	
EXTCUSTREF	VARCHAR2(50)		N	
VENDID	VARCHAR2(50)		N	



Attribute/Column Name	Column Type	PK indicator	Nullable	Comments
COMPANYID	VARCHAR2(50)		N	
ALTPLANTID	VARCHAR2(50)		N	
LASTUPDATED	DATE		N	
CUST	VARCHAR2(18)		N	
TRANSZONE	VARCHAR2(18)		N	
UDC_COUNTRY	VARCHAR2(50)		Y	
UDC_AFFILIATE	VARCHAR2(50)		Y	
UDC_AREA	VARCHAR2(50)		Y	
UDC_AREADESC	VARCHAR2(50)		Y	
UDC_LOCLVL	VARCHAR2(50)		Y	
UDC_AFFCODE	VARCHAR2(50)		Y	

STGMGR.STG_SOP_PRE_DMD_TOT table description (target)

Attribute/Column Name	Column Type	PK indicator	Nullable	Comments
ITEM_NO	VARCHAR2(30)	1	N	
SHIP_TO	VARCHAR2(10)	2	N	
SOURCE_LOC	VARCHAR2(10)	3	N	
MTH_START_DATE	DATE	4	N	
QTY	FLOAT(126)		N	
LAST_UPD_BY	VARCHAR2(50)		N	
CREATED_BY	VARCHAR2(50)		N	Default user
LAST_UPD_DATE	DATE		N	
CREATION_DATE	DATE		N	Default sysdate
RECORD_TYPE	VARCHAR2(10)		Y	

4.2. DATABASE SERVICES

Service names for the databases utilized in the doc.

Environment Name	Service Name	Host Name	Host Domain
Staging Development	MSTDD	Mstd	northamerica.intra.abbott.com
Staging QA	MSTQ	Mstq	northamerica.intra.abbott.com
Staging Production	MSTP	Mstp	northamerica.intra.abbott.com
Supply SCPO Development	MSCSDD	aiapascm001d	northamerica.intra.abbott.com
Supply SCPO QA	MSCSQ	aiapascm201q	northamerica.intra.abbott.com
Supply SCPO Production	MSCSP	aiapascm001	northamerica.intra.abbott.com

4.3. DATABASE BACKUP AND RECOVERY

As currently defined/specified by the DB Administrator.



5. PROPOSED PROCESS FLOWS

This section describes how the process flows, including process diagram, detailed process steps with utilized file names, locations and data mappings.

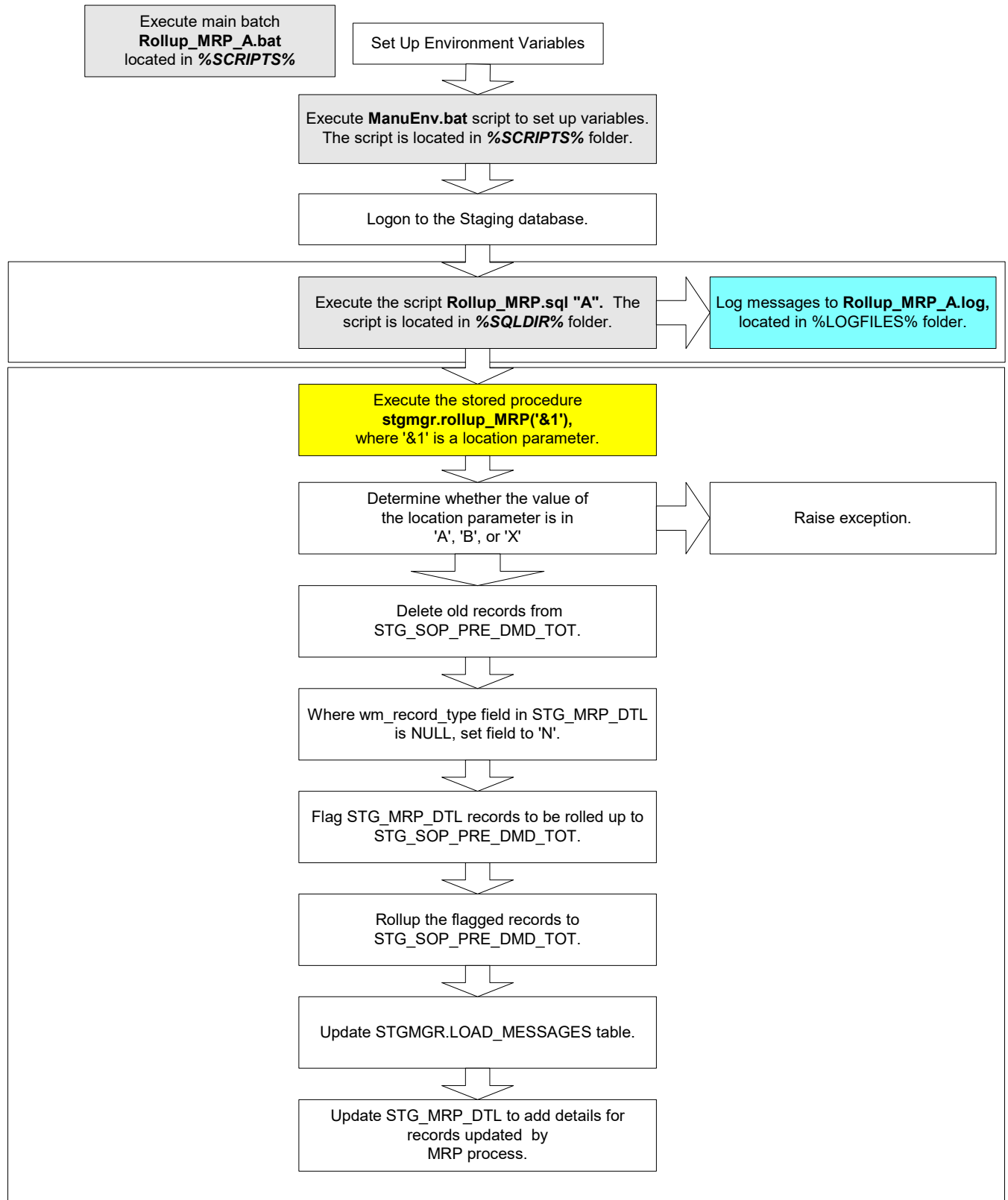
5.1. SUPPORTING DIAGRAMS

This section presents the process data flow diagram.



Rollup MRP

Detailed Data Flow



5.2. DETAIL PROCESS FLOW

This section presents the detailed process description.

Note: This job may be launched from the batch job rollup_MRP_A.bat, rollup_MRP_B.bat, or rollup_MRP_X.bat where A, B, and X are parameters for location.

For purposes of illustration, this specification will document the use of the A parameter.

Process Name: Rollup Material Requirement Planning (MRP)

Process Location: %SCRIPTS%

Process Log: %LOGFILES%\Rollup_MRP_A.log

Process Language: Stored Procedure

Process Execution: Rollup_MRP_A.bat

Detailed Process Steps:

1. Execute %SCRIPTS%\Manuenv.bat script to set up batch environment.
2. Set Up Environment. The following variables are set up during this step: SQLPRG, SQLLOGON_STG, ORALOGON, SQLDIR, LOGFILES.
3. Launch SQL*Plus and log on to the Staging database.
4. Call the script %SQLDIR%\Rollup_MRP.sql and pass the location parameter "A". Use %LOGFILES%\Rollup_MRP_A.log as the logfile.
5. Execute the script Rollup_MRP.sql, which calls the stored procedure stgmgr.rollup_MRP ('&1'), where '&1' is the location parameter passed from the bat file.
6. The stored procedure stgmgr.rollup_MRP ('&1') performs the following actions:
 - Declare the variables.
 - Determine whether the location parameter is in A, B, or X. If not, raise an error.
 - Delete the rollup MRP records from the last run in the STG_SOP_PRE_DMD_TOT table.
 - Count the rows deleted and commit the changes.

```
DELETE FROM stg_sop_pre_dmd_tot
WHERE record_type = 'MRP'
      (SELECT DISTINCT l.loc
FROM stsc.loc@mscs l
WHERE l.altplantid = p_altplantid
AND source_loc = l.loc
AND l.scen = 0
AND EXISTS AND l.scenbits = 0);
```



Select STG_MRP_DTL records where wm_record_type is NULL and set the contents of wm_record_type to 'N'. Count the number of records updated.

```
UPDATE stg_mrp_dtl
      SET wm_record_type = 'N'
WHERE  wm_record_type IS NULL
```

Use the following data mapping:

<i>STG_MRP_DTL</i>	<i>STG_MRP_DTL or calculated value</i>	<i>Comments</i>
wm_record_type	N	hard coded value

Flag the STG_MRP_DTL records that are to be rolled up to STG_SOP_PRE_DMD_TOT.

```
UPDATE stg_mrp_dtl
      SET wm_last_upd_by = 'ROLLUP_MRP'
WHERE  wm_record_type <> 'C'
      AND schedule_status = 'M'
      AND TO_CHAR(required_date,'yyyymm') >= TO_CHAR(SYSDATE,'yyyymm')
      AND required_date >= TRUNC(ADD_MONTHS(SYSDATE,-1),'MONTH')
      AND source_loc = (SELECT DISTINCT loc FROM stsc.loc@mscs
                        WHERE altplantid = p_altplantid
                        AND source_loc = loc
                        AND scen = 0
                        AND scenbits = 0);
```

Use the following data mapping:

<i>STG_MRP_DTL</i>	<i>STG_MRP_DTL or calculated value</i>	<i>Comments</i>
wm_last_upd_by	'ROLLUP_MRP'	hard coded value

Count the number of rows read.



Rollup the flagged records in the STG_MRP_DTL table to the STG_SOP_PRE_DMD_TOT table.

```
INSERT INTO  stg_sop_pre_dmd_tot
            (item_no, ship_to, source_loc, mth_start_date, qty, last_upd_by,
             created_by, last_upd_date, creation_date, record_type)

SELECT      RTRIM(t1.item_no), RTRIM(t1.ship_to), RTRIM(t1.source_loc),
            TO_DATE(TO_CHAR(t1.required_date,'yyyymm') || '01','yyyymmdd'),
            SUM(t1.qty), 'webmethods', 'webmethods', SYSDATE, SYSDATE,
            'MRP'

FROM        stg_mrp_dtl t1,
            stsc.loc@mscs l

WHERE       t1.wm_last_upd_by = 'ROLLUP_MRP'

            AND l.altplantid = p_altplantid

            AND t1.source_loc = l.loc

            AND l.scen = 0

            AND l.scenbits = 0

GROUP BY    R TRIM(t1.source_loc), RTRIM(t1.ship_to), RTRIM(t1.item_no),
            TO_CHAR(t1.required_date,'yyyymm');
```

Use the following data mapping:

STG_SOP_PRE_DMD_TOT	STG_MRP_DTL (A) or calculated value	Comments
item_no	RTRIM(t1.item_no)	calculated value from A
ship_to	RTRIM(t1.ship_to)	calculated value from A
source_loc	RTRIM(t1.source_loc)	calculated value from A
mth_start_date	TO_DATE(TO_CHAR(t1.required_date,'yyyymm') '01','yyyymmdd')	calculated value from A
qty	SUM(t1.qty)	calculated value from A
last_upd_by	'webmethods'	hard coded value
created_by	'webmethods'	hard coded value
last_upd_date	SYSDATE	hard coded value
creation_date	SYSDATE	hard coded value
record_type	'MRP'	hard coded value

Count the number of records inserted to stg_sop_pre_dmd_tot.

Update the STGMGR.LOAD_MESSAGES table.

```
INSERT INTO  stgmgr.LOAD_MESSAGES
            (MESSAGE_ID, TABLE_NAME, MESSAGE_TEXT, START_TIME,
             END_TIME, TOT_NUM_RECS, NUM_RECS_UPD)

VALUES      (stgmgr.msglog_seq.NEXTVAL, 'STG_SOP_PRE_DMD_TOT', 'Records
            rolled up into STG_SOP_PRE_DMD_TOT.....Completed',
            v_proc_start_time, SYSDATE, v_recs_added, v_recs_added);
```

Use the following data mapping:



LOAD_MESSAGES	STGMGR.MSGLOG_SEQ or calculated value	Comments
MESSAGE_ID	stgmgr.msglog_seq.NEXTVAL	calculated value
TABLE_NAME	'STG_SOP_PRE_DMD_TOT'	hard coded value
MESSAGE_TEXT	'Records rolled up into STG_SOP_PRE_DMD_TOT..... Completed'	hard coded value
START_TIME	v_proc_start_time	calculated value
END_TIME	SYSDATE	calculated value
TOT_NUM_RECS	v_recs_added	calculated value
NUM_RECS_UPD	v_recs_added	calculated value

Commit the changes to the database.

Update the STG_MRP_DTL table to add details for the records that were updated by 'ROLLUP_MRP'.

```
UPDATE stg_mrp_dtl
SET   wm_record_type = 'C',
      wm_last_upd_by = 'webmethods',
      wm_last_upd_date = SYSDATE
WHERE wm_last_upd_by = 'ROLLUP_MRP';
```

Use the following data mapping:

STG_MRP_DTL	STG_MRP_DTL or calculated value	Comments
wm_record_type	'C'	hard coded value
wm_last_upd_by	'webmethods'	hard coded value
wm_last_upd_date	SYSDATE	hard coded value

Count the number of records updated and commit the changes to the database.

Display output messages showing the contents of the counters.



5.3. UTILIZED FILES

The files utilized by the process.

File Type	File Location	File Name	Contents
DOS Batch file	%Scripts% C:\Integrations\Supply\Scripts	Rollup_MRP_A.bat Rollup_MRP_B.bat Rollup_MRP_X.bat	The main batch file for the process of rolling up MRP records in STG_MRP_DTL to STG_SOP_PRE_DMD_TOT, where 'A' is a location parameter
DOS Batch file	%SCRIPTS% C:\Integrations\Supply\Scripts	Manuenv.bat	The batch file setting environment variables used during batch process execution
Executable	%SQLS% C:\Integrations\Supply\SQLS	Rollup_MRP.sql	The script that calls the stored procedure stgmgr.rollup_MRP ('&1') and passes the parameter '&1' to the stored procedure
Log file	%LOGFILES% C:\Integrations\Supply\Logs	Rollup_MRP_A.log Rollup_MRP_B.log Rollup_MRP_X.log	The log file used during execution of the bat file, where 'A', 'B', and 'X' are location parameters

5.4. ENVIRONMENT CHANGE NOTES

The section describes major type of changes in the batch execution environment that may happen while moving batch processes from one environment to the other one and lists the files affected by the changes.

The files affected by the environment change

Change Type	Affected Files
Supply SCPO DB SID Change	• %SCRIPTS%\Rollup_MRP_A.bat • %SCRIPTS%\Rollup_MRP_B.bat • %SCRIPTS%\Rollup_MRP_X.bat • %SQLS%\Rollup_MRP.sql • %SCRIPTS%\ManuEnv.bat
Staging DB SID Change	• %SCRIPTS%\Rollup_MRP_A.bat • %SCRIPTS%\Rollup_MRP_B.bat • %SCRIPTS%\Rollup_MRP_X.bat • %SQLS%\Rollup_MRP.sql • %SCRIPTS%\ManuEnv.bat
Supply SCPO Host Change	• %SCRIPTS%\Rollup_MRP_A.bat • %SCRIPTS%\Rollup_MRP_B.bat • %SCRIPTS%\Rollup_MRP_X.bat • %SQLS%\Rollup_MRP.sql • %SCRIPTS%\ManuEnv.bat
Manu Software Path Change	• %SCRIPTS%\MANUENV.bat
Supply Processes Path Change	• %SCRIPTS%\Rollup_MRP_A.bat • %SCRIPTS%\Rollup_MRP_B.bat • %SCRIPTS%\Rollup_MRP_X.bat • %SQLS%\Rollup_MRP.sql • %SCRIPTS%\ManuEnv.bat
Batch user Oracle ID / Password Change	• %SCRIPTS%\MANUENV.bat

5.5. DATA CLEANUP & ARCHIVAL ISSUES

Data Cleanup & Archival issues are not addressed yet.