Data Export
Fourth Shift Release 8.00

Fourth Shift Help
Release 8.00

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Data Export Module

The data export features in the System Control Module make it easy to extract information from the database for subsequent analysis and report generation by decision support tools such as spreadsheets, database managers, and graphics packages. You define a data view based on predefined paths into the database and then extract a file of information corresponding to the data view. The extract files can be manipulated using the decision support tool of your choice to produce reports, generate graphics, and perform simulations.

Using the Data Export Features

This section provides guidelines that may be helpful for using the data export features in your company.

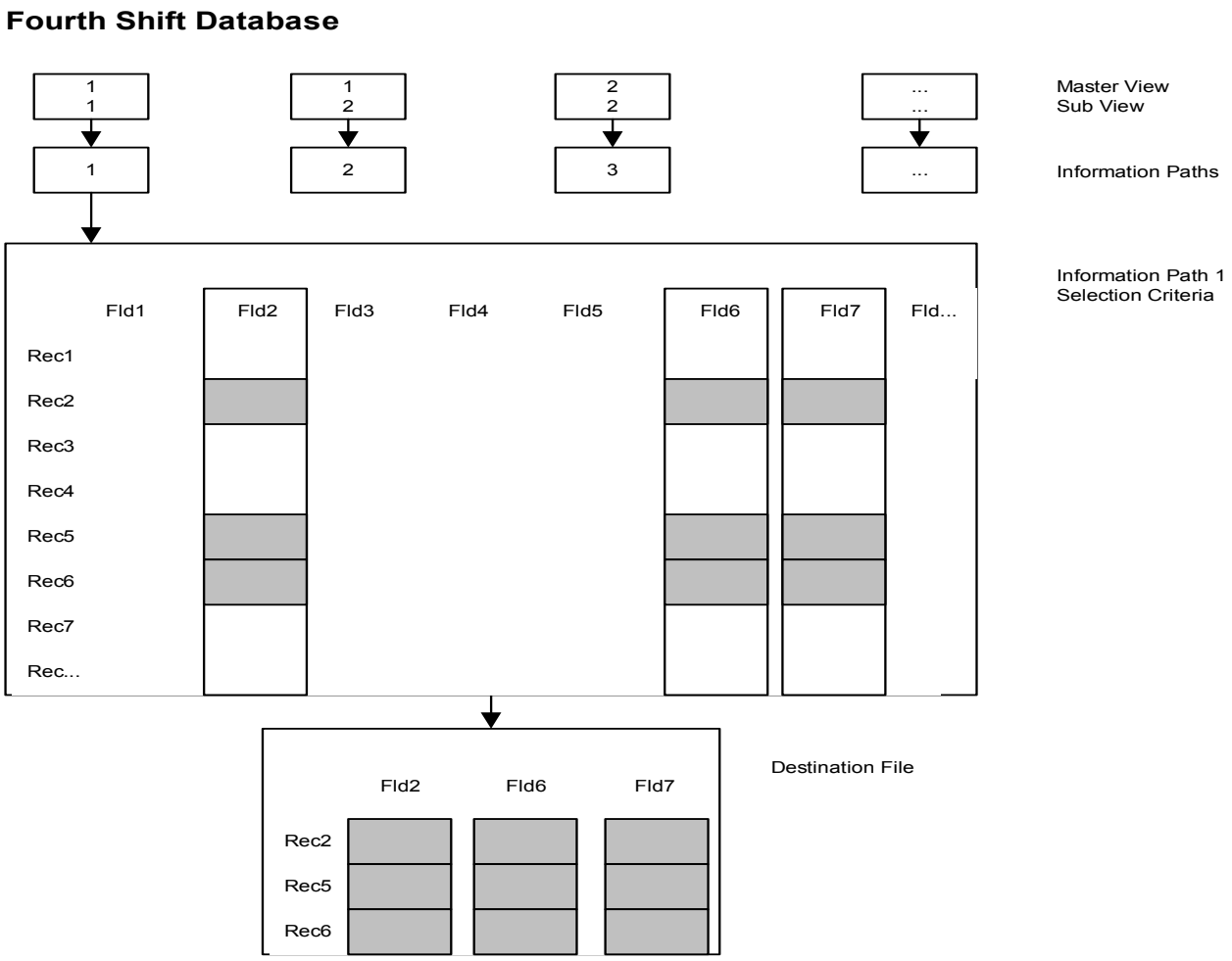
See the **Data Export Information Paths** manual to determine what data view field name is associated with fields displayed on the screen.

Designing Your Information Formats

Using the data export features, you extract records from the Fourth Shift database to be used with a variety of decision support tools to produce reports, create your own databases and so on. Before you start using the data export features, decide how you want to use the information. Design the reports, graphs or databases you are going to generate using the extracted records.

The data in the Fourth Shift database are accessed through information paths. Information paths represent predefined groups of database records and fields. A predefined group is defined by a general category (Master View) and a sub category (Sub View). Once the information path is selected, you select the corresponding records and fields to define a data view.

When you perform the data extract, each selected record represents a row in a matrix while the columns consist of the data view fields selected. For example, the following chart shows that the data view defined for Information Path 1 has record selection criteria that matches Rec2, Rec5 and Rec6 and field selection criteria that matches Fld2, Fld6 and Fld7. The shaded areas where these records and fields intersect represent the information extracted by this data view.



It might be necessary to define several data views to meet your external information requirements.

The information paths currently available for the Fourth Shift database are listed in **Data Export Information Paths**. Use **Data Export Information Paths** to familiarize yourself with the data view fields included in each information path. Please note that the records in the Fourth Shift database depend on the modules installed in your system.

SYSM Analyzing Your Tool Requirements

The records you extract can be used with a variety of decision support tools. After determining your information requirements, select the tool that matches the complexity of each task you want to perform. Decision support tools can be categorized by functionality required and user preference. Your preference can depend on previous experience, what you want to do and what you are willing to learn. For example:

- Natural Languages are the most like sentences. Natural Languages are suitable for simple, direct inquiries and can be used by any users. An example of a Natural Language is Guru.
- Spreadsheets are most suitable when performing calculations and presenting numeric data, such as budgets. Spreadsheets, such as Excel and VP-Planner, can be used by any users.

- Spreadsheet Command Macros are a more advanced method of using spreadsheets. Spreadsheet Command Macros are used by experienced users to manipulate spreadsheets automatically based on predefined instructions.
- Report Writers characterized by pull-down menus, page formatters and command lines are most suitable for generating standard reports combining a limited number of files. Report Writers, such as dBASE and VP-Info, are used by experienced users.
- Fourth Generation Languages are a more advanced method of using report writers. Fourth Generation Languages, such as the command languages of dBASE and VP-Info, are used by users who are technically inclined.
- High-Level Programming Languages, such as Cobol and Basic, can produce more complex reports and track database information. High-Level Programming Languages are used by programmers.
- Low-Level Programming Languages, such as Assembler, are suitable for very complex tasks. Low-Level Programming Languages are used by systems programmers.

Entering Record Selection Expressions

Record selection expressions for a data view can be entered online or in an external input file.

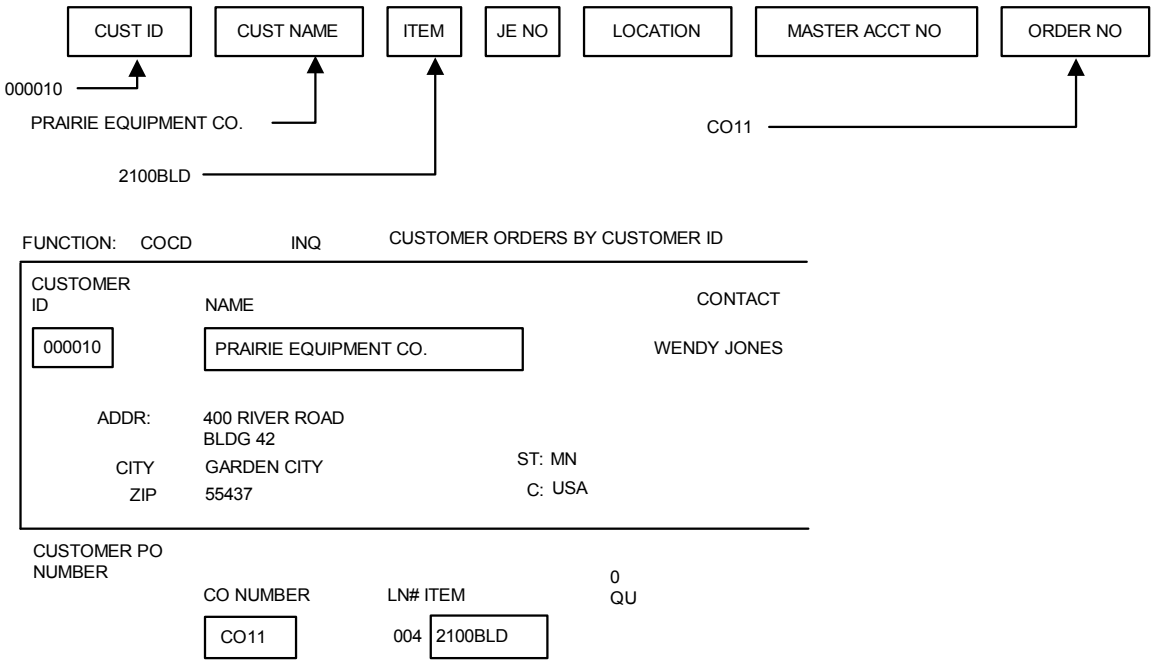
- Use the DVUD screen to enter the record selection expression online in the **Record Selection Criteria** field.
- Specify the external input filename on the parameter line of an extract task to use record selection expressions from an external file. The record selection expression specified in an external input file takes precedence over any entry made in the **Record Selection Criteria** field on the DVUD screen for the data view.

Use the same record selection criteria rules and syntax when creating the external input file as you would when entering the record selection expression in the **Record Selection Criteria** field. The input file must be an ASCII file. The size limit of the input file varies according to available memory and the complexity of the record selection expression. Validation of the record selection expression in the external input file occurs as part of the extract task. Check the LOG.XXX file for invalid record selection expressions.

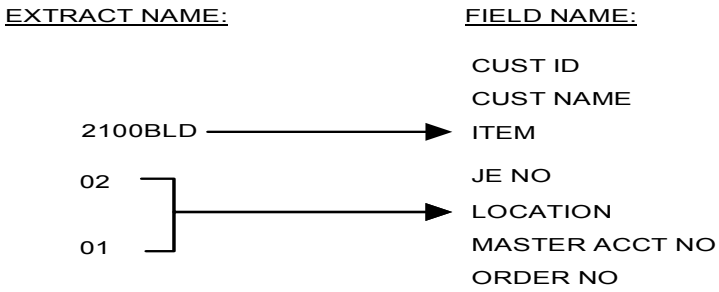
Extracting Using the Current Screen

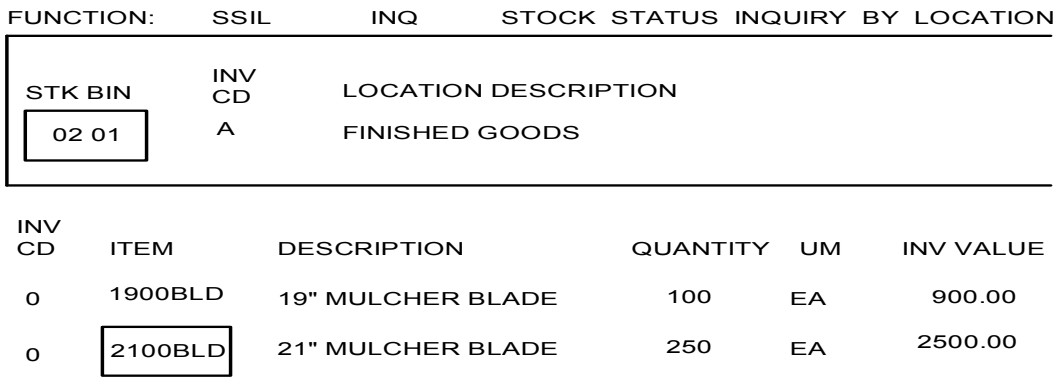
The @REMEMBERED_FIELD keyword allows you to extract records from any screen based on a defined data view and the information the system remembers from screen to screen. The @REMEMBERED_FIELD keyword, along with the CIM Customizer Module, allows you to request an online extract by pressing an activation key, and in effect, press ESC to remember the key fields on the current screen.

For example, the **Customer Id, Customer Name, CO Number** and **Item** fields are remembered from the COCD (Customer Orders by Customer Id) screen:



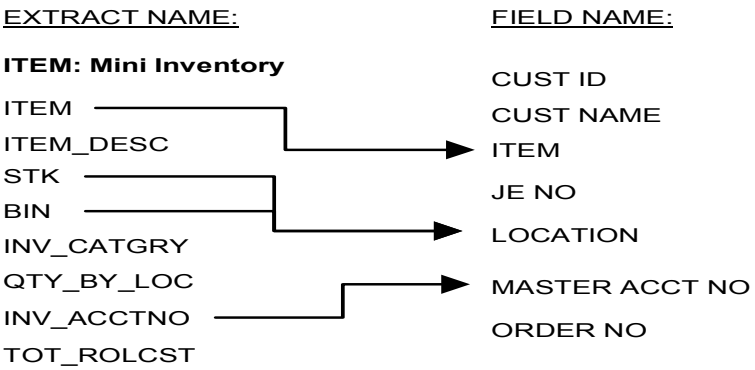
The **Stk, Bin** and **Item** fields are remembered from the SSIL (Stock Status Inquiry by Location) screen:





Predictable extract results are only possible when one of the key fields remembered from the current screen matches the data view field used with the @REMEMBERED_FIELD keyword.

For example, the Item:Mini Inventory information path can make use of the following remembered fields:



Each one of these data view fields can be used with the @REMEMBERED_FIELD keyword to define a record selection expression for the data view:

ITEM = @REMEMBERED_FIELD

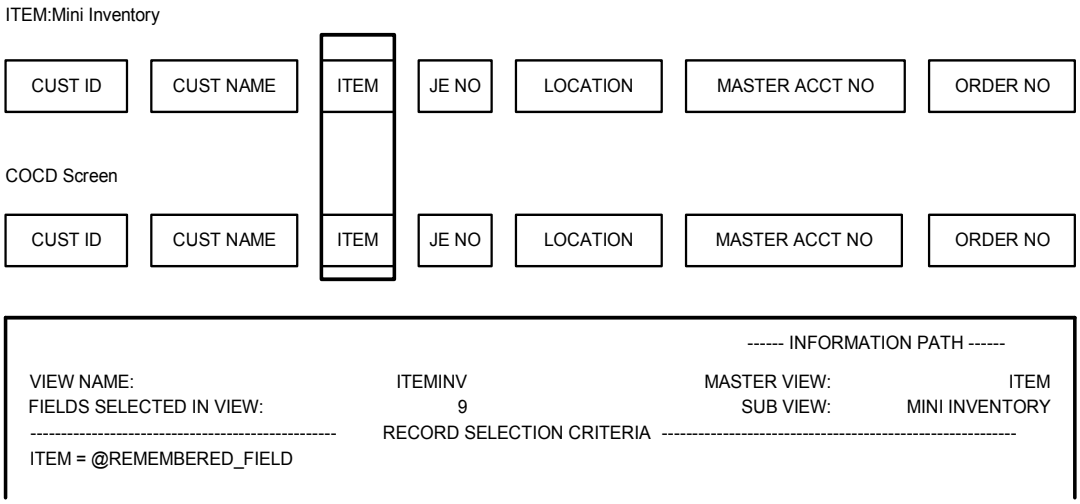
STK = @REMEMBERED_FIELD

BIN = @REMEMBERED_FIELD

INV_ACCTNO = @REMEMBERED_FIELD

The intersection between Item:Mini Inventory and the COCD screen is the **Item** field. Therefore, the predictable online extract from the COCD screen for Item:Mini Inventory can only use the record selection expression:

ITEM = @REMEMBERED_FIELD

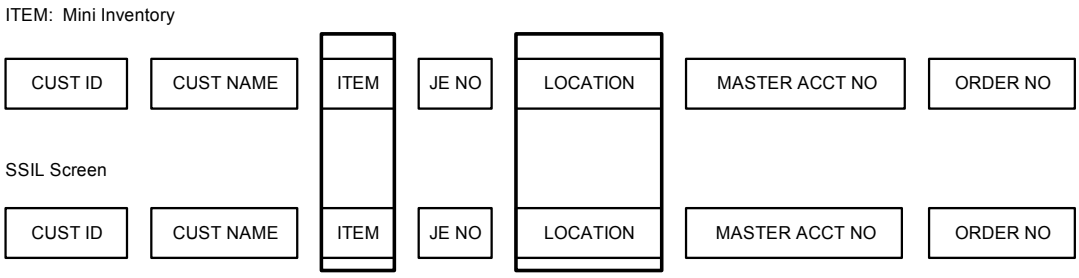


The intersection between Item:Mini Inventory and the SSIL screen includes the **Item, Stk** and **Bin** fields. The predictable online extracts from the SSIL screen for Item:Mini Inventory can use one of the following record selection expressions:

ITEM = @REMEMBERED_FIELD

STK = @REMEMBERED_FIELD

BIN = @REMEMBERED_FIELD




```
                                                    ------ INFORMATION PATH ------
VIEW NAME:                          ITEMINV         MASTER VIEW:              ITEM
FIELDS SELECTED IN VIEW:                 9          SUB VIEW:          MINI INVENTORY
----------------------------------- RECORD SELECTION CRITERIA  ----------------------------------------------
ITEM = @REMEMBERED_FIELD
```

```
                                                    ------ INFORMATION PATH ------
VIEW NAME:                          ITEMINV         MASTER VIEW:              ITEM
FIELDS SELECTED IN VIEW:                 9          SUB VIEW:          MINI INVENTORY
----------------------------------- RECORD SELECTION CRITERIA  ----------------------------------------------
STK = @REMEMBERED_FIELD
```

```
                                                    ------ INFORMATION PATH ------
VIEW NAME:                          ITEMINV         MASTER VIEW:              ITEM
FIELDS SELECTED IN VIEW:                 9          SUB VIEW:          MINI INVENTORY
----------------------------------- RECORD SELECTION CRITERIA  ----------------------------------------------
BIN = @REMEMBERED_FIELD
```

See the **Data Export Information Paths** manual for detailed remembered field information.

Note: The @REMEMBERED_FIELD keyword can be used when defining a record range. However, entering the @REMEMBERED_FIELD keyword at both ends of the ">"and "<" operators in the record selection expression creates the same extract as using the "=" operator.

For example, the record selection expression:

ITEM >= @REMEMBERED_FIELD AND ITEM <= @REMEMBERED_FIELD

is equivalent to the record selection expression:

ITEM = @REMEMBERED_FIELD

See the CIM Customizer manual for more details on online extracts.

Extracting Data Views

Once data views are defined, you can easily create files of extracted records by setting up the following tasks on the BSET (Batch Process Setup) screen and executing the batch processes using the BEXE (Batch Process Execution) screen.

Task	Task Output

ACCX (Access Extract)	files for use in Microsoft Access
ASCX (ASCII Extract)	comma-delimited ASCII file
DBSX (dBASE Extract)	files for use in dBASE
EXLX (Excel Extract)	files for use in Microsoft Excel

The ACCX, DBSX and EXLX tasks format character, number and date fields according to its related decision support tool. In this way, the extract file is automatically read as a worksheet or database file and does not need to be imported.

The ASCX task only formats dates in the format YYYYMMDD.

When an existing file is specified as the destination file for the ASCX, DBSX and EXLX tasks, the existing records in the file are replaced with the new records after the extract task is executed if the append option is not used. The ACCX task requires you to use the Append Database or Overwrite Table option if the destination file already exists; it does not overwrite existing database files. For an explanation of the append option, see "Appending Data Views" in this section.

In the case where no records are found to match the selection criteria for the data view, only column headings are created in the extract file. You then have the option of adding records to the file.

Once an extract task is executed, you can manipulate the extract file with your decision support tool. Samples of reports produced using extracted records are included in "Data Export Report Examples". Suggestions for extracting data views are as follows:

- Use a fully qualified destination filename for the file to which records are being extracted. The file should be located in the same directory as your decision support tool and include the proper extension.

For example, an extract file to be used in a WRKSHEET directory for a data view called JINVNTRY is entered as **C:\WRKSHEET\JINVNTRY.TXT.**

- If you are using macros in a worksheet, define them in an area of the worksheet that will not be overlaid by adding a file. Another way to avoid overlaying existing records is to perform a file/combine as opposed to a file/read command.

Data extract tasks place shared locks on data groups based on the data view selected. This prevents any other task requiring exclusive access, such as the GLMQ (G/L Module Communication) task, from executing. Plan the use of extract tasks during a time when other users will not be running other tasks needing exclusive access. See "Database Locking" in the System Administrationmanual for more information.

Appending Data Views

The ACCX, ASCX and DBSX tasks can add records to the end of existing extract files. In this way, you are adding rows of records to established columns. Extracted records can only be appended to a file when the new record has the same data view field layout as the existing file. That is, the columns (data view fields) of records extracted are the same both in content and sequence.

For example, you might only want inventory records for items 18-LM, 20-LM and 24-LM. You can define a data view for each item and append the data views to the same extract file.

Using the DVUD screen, the definition for the data view for 18-LM would include:

View Name: INV18-LM

Master View: ITEM

Sub View: MINI INVENTORY

Record Selection Criteria: ITEM = "18-LM"

Using the DVUD screen, two additional data views—INV20-LM and INV24-LM—are created for items 20-LM and 24-LM respectively. The INV20-LM and INV24-LM data views each have the same data view fields selected as the INV18-LM data view.

Using the BSET screen and the DBSX task, the file INVENTRY.DBF is created in the SPREAD directory for the INV18-LM data view. The INV20-LM and INV24-LM data views are then appended to the INVENTRY.DBF file as shown below.

Seq Num	Task	Parameters
01	DBSX	VINV18-LM DC:\SPREAD\INVENTRY.DBF
02	DBSX	VINV20-LM DC:\SPREAD\INVENTRY.DBF A
02	DBSX	VINV24-LM DC:\SPREAD\INVENTRY.DBF A

After the DBSX task is executed, the INVENTRY.DBF file looks similar to this:

Item	Item_Desc	UM	Stk	Bin	Inv_Catgry
18-LM	18" Rotary Mower 3.5 HP B&S Engine	EA	FG	A100	0
20-LM	20" Rotary Mower 3.5 HP B&S Engine	EA	FG	A101	0
24-LM	24" Rotary Mower 3.5 HP B&S Engine	EA	FG	A102	0

Printing Data Views

The PRTX (Printed Extract) task creates a report based on a specific data view definition established on the DVUD (Data View Definition) screen. The report includes headings and information for fields in the data view up to 132 characters.

Data Export Report Examples

This section presents examples of reports, mailing labels and historical data extracts produced by extracting Fourth Shift records and using decision support tools. The steps used to produce each example are also included. It is assumed that you are familiar with the decision support tool with which you are using Fourth Shift files.

See the CIM Customizer manual for examples of on-line data retrieval.

Lot Usage Report

The Lot Usage Report lists inventory transactions for each item by lot number. Each transaction is identified by date, time, user identification, lot status, transaction quantity and order-related information, if applicable.

Producing the example Lot Usage Report involves:

- defining one data view for inventory move transactions and inventory adjustment transactions
- selecting all fields for the view
- extracting the data view
- using the extract file in dBASE and defining the report

The following steps were used to produce the report:

1. Use the DVUD (Data View Definition) screen to define the data view with the following criteria:

   Master View: External

   Sub View: Inven Tranx

   Record Selection Criteria:

   TRANS_CODE = “IMTR” OR TRANS_CODE = “INVA”

   Note: This TRANS_CODE field is different than the @TRANS_CODE keyword used when extracting history records.

2. Select all the fields available for the data view. Open the Mass Maintenance window and choose to select all fields.
3. Extract the data views using the DBSX (dBASE Extract) task and the destination filename LOTUSE.DBF. Append the second data view to the LOTUSE.DBF extract file using the append option.
4. Start dBASE and select the LOTUSE.DBF database file.
5. Define the report for the LOTUSE.DBF database file. The page width is 80. Headings and corresponding contents are as follows:

Heading	Contents
Trans Code	Trans_Code
User Id	User_Id
Trans Date	Trans_Date
Trans Time	Trans_Time
M1	Tran_Mdfr1
M2	Tran_Mdfr2
Order/Reference Number	Order_No
Lin #	Ln No
Lot Sta	Inv_Cd
Trans Quantity	Quantity

6. Sort the report by item identification first and then lot numbers within item identification.
7. Save and print the Lot Usage Report.

Item Planning Parameter Report

The Item Planning Parameter report is generated to assist buyers and planners in setting the critical planning parameters used in your system. The Item Planning Parameter report lists item-related information, future supply quantities and future supply costs for manufacturing orders where the:

- **Item Type** = N or T
- **Item Status** = A or P
- **Order Policy** = 3 or 4

The example Item Planning Parameter Report involves defining three data views which include the following information:

- item-planning records
- item classification records
- order records used to calculate the future supply quantities and costs

The following three sections outline the steps involved in preparing the final Item Planning Parameter Report. Each of the three data views builds on the other, creating two intermediate and one final report. The intermediate reports are printed with each corresponding section.

Extracted information is added to the ITEMPLNA.TXT file to create the intermediate and final reports.

Intermediate Report A

Defining the First Data View

The first data view extracts item-related records using the Item:Planning Data information path. Intermediate Report A is created from the information extracted with this data view.

1. Use the DVUD (Data View Definition) screen to define the ITEMPLNA data view with the following criteria:

   Master View: Item

   Sub View: Planning Data

   Record Selection Criteria:

   ```
   (ITEM_TYPE = “N” OR ITEM_TYPE = “T”)
   AND
   (ITEM_STAT = “A” OR ITEM_STAT = “P”)
   AND
   (ORD_POLICY = “3" OR ORD_POLICY = ”4")
   ```

   Use the FIELD SELECTION window to select the following fields:

   ```
   ITEM
   ITEM_DESC
   UM
   REV
   MB
   ITEM_STAT
   ORD_POLICY
   PLNR
   BUYR
   PLN_POLICY
   RUN_LT
   ```

FIX_LT
INSP_LT
LOT_SZ_DAY
LOT_SZ_QTY
SAFETY_STK
LOT_SZ_NUM
LOT_SZ_MUL
ATP
PLNG_FNC
TOT_ROLCST

Extract the ITEMPLNA data view using the ASCX (ASCII Extract) task and the ITEMPLNA.TXT destination filename.

2. Format the report by rearranging and substituting column headings for the data view field names as follows:

Data View Field Name	Column Heading
MB	MB
PLNR	PLNR
BUYR	BUYR
ITEM	ITEM
ITEM_DESC	DESCRIPTION
UM	UM
REV	REV
ITEM_STAT	ST
ORD_POLICY	ORD POL
PLN_POLICY	PLN POL
PLNG_FNC	PLN FNC
RUN_LT	RUN LEAD TIME
FIX_LT	FIX LEAD TIME
INSP_LT	INSP LEAD TIME
TOT_ROLCST	STANDARD COST
ATP	ATP

Note: The extracted data not used in this report will be used in the final report. Do **not** delete this data from the ITEMPLNA.TXT file.

Intermediate Report B

Defining the Second Data View

The second data view extracts item and item class records using the Item:Reference Data information path. Intermediate Report B is created from this extract. It is the same as Intermediate Report A with the addition of a column listing item classification information for each item.

1. Use the DVUD (Data View Definition) screen to define the ITEMPLNB data view with the following criteria:

   Master View: Item

   Sub View: Reference Data

   Record Selection Criteria: ALL

   Use the Field Selection window to select the following fields:

   ITEM
   ITEM_CLAS1

   Note: When selecting the ITEM_CLAS1 data view field, be sure that you select the field which contains your item classification information. For example, if your item classification information is included in the second **Item Class** field on the Item Master Detail screen, use the ITEM_CLAS2 data view field for this data view.

2. Extract the ITEMPLNB data view using the ASCX (ASCII Extract) task and the ITEMPLNB.TXT destination filename.
3. Insert the ITEM_CLAS1 column from the ITEMPLNB.TXT file into the ITEMPLNA.TXT file. Be sure the rows of ITEM_CLAS1 column and the rows of the **Item** column are aligned correctly.
4. Substitute the **Item Class** column heading for the ITEM_CLAS1 data view field name in the report.

Defining the Third Data View

The third data view extracts records using the Item:Supplies information path. This extract provides the information necessary for the **Next 4 Qtr Supply Qty** and **Next 4 Qtr Supply Std** columns on the final Item Planning Parameter Report.

1. Use the DVUD (Data View Definition) screen to define the ITEMPLNC data view with the following criteria:

   Master View: Item

   Sub View: Supplies

   Record Selection Expression: LN_STA < 5

   Use the FIELD SELECTION window to select the following fields:

   ITEM
   ORDER_QTY
   QTY_RCVD
   SCHED_DATE

2. Extract the ITEMPLNC data view using the ASCX (ASCII Extract) task and the ITEMPLNC.TXT destination filename.
3. Calculate the future supply quantities.

   The scheduled date must be less than one year from today's date. This ensures that the future supply quantities only reflect information for the next four quarters. Do **not** use any data in your calculations which do not meet this criteria.

   - Calculate the (ORDER_QTY — QTY_RCVD) for each line of the ITEMPLNC.TXT file. Exclude any negative values.
   - Sum the (ORDER_QTY — QTY_RCVD) by item. This number is the future supply quantity for each item.

For example, the following chart illustrates the calculation of the future supply quantity for the item 1900BLD.

Order_Qty	Qty_Rcvd	Sched_Date	Calculation
185	0	8/15/98	185-0 = 185
350	0	8/15/98	350-0 = 350
370	370	10/5/98	370-370 = 0
700	500	12/20/98	700-500 = 200
145	0	12/20/98	145-0 = 145
250	250	12/20/98	250-250 = 0
			supply qty = 880

This total is used in the **Next 4 Qtr Supply Qty** column of the Item Planning Parameter Report.

4. Insert the future supply quantities calculated for each item into the ITEMPLNA.TXT file.
5. Calculate the future supply costs.

   Multiply each future supply quantity by the corresponding **Standard Cost** column (TOT_ROLCST) found in the ITEMPLNA.TXT file. This figure will appear in the **Next 4 Qtr Supply Std** column of the Item Planning Parameter Report for the particular item.
6. Insert the future supply costs calculated for each item into the ITEMPLNA.TXT file.
7. Format the ITEMPLNA.TXT file to include the following extract information by including and substituting the row headings for the data view names as follows:

Data View Name	Row Heading
LOT_SZ_DAY	LOT SIZE DAY
LOT_SZ_QTY	LOT SIZE QTY
SAFETY_STK	SAFETY STOCK
LOT_SZ_MIN	LOT SIZE MIN
LOT_SZ_MUL	LOT SIZE MULT

Mailing Labels

Mailing labels can be printed for customers and vendors by extracting names and addresses from the Fourth Shift database. Producing the example mailing labels involves defining a data view for the names and addresses, extracting the data view, using the extract file in dBASE and defining the label format.

The following steps were used to produce the mailing labels:

1. Use the DVUD (Data View Definition) screen to define a data view with the following criteria:

   Master View: Miscellaneous

Sub View: Name & Adr Data

Record Selection Criteria: ALL

Field Selection: NAME, ADDR1, ADDR2, CITY, STATE, ZIP

2. Extract the data view using the DBSX (dBASE Extract) task and the destination file name MAILING.DBF.
3. Start dBASE and select the MAILING.DBF database file.
4. Use the create/label menu selection and begin defining the label dimensions.
5. Define the label contents as field names. The contents are as follows:

```
1:  Name
2:  Addr1
3:  Addr2
4:  City,"," ,State
5:  " "+Zip
```

6. Save the label format and print the mailing labels on special label sheets.

Historical Purchase Prices

An ASCII file including historical purchase prices for items previously ordered can be generated by extracting records from the Fourth Shift database. Producing this file involves defining a data view for the records you want extracted and then extracting the data view.

The following steps were used to produce an historical purchase price file:

1. Use the DVUD (Data View Definition) screen to define a data view with the following criteria:

   Master View: Order

   Sub View: PO Detail

   Record Selection Criteria:

   ITM_GLMOCO = @BSET_PARM_LINE(1)

   Field Selection:

   VENDOR_ID, VEND_NAME, ORDER_QTY, ITM_GLMOCO, ITEM_DESC, UNIT_PRICE

2. Use the BSET (Batch Process Setup) screen to set up an ASCX task to extract historical purchase order information. For example, to extract records for item “235” using the PO_RECEIPTS data view and the PO.TXT file, enter the following task line:

```
01  ASCX  VPO_RECEIPTS  DPO.TXT  C1"235"
```

3. Use the BEXE (Batch Process Execution) screen to execute the batch process.

Extracting History Information

The @TRANS_CODE keyword and the External:Archive information path are used to extract item-related transactions from the ARCHIVE.FIL file. The External:Archive information path is predefined to include item-related transactions. Additional history transactions can be specified if necessary.

Specifying a history extract involves:

- editing a file to define the history transactions in the ARCHIVE.FIL file you want to extract

- using the DVUD (Data View Definition) screen to define a data view for the history extract

Using the HISDEF.DAT File

The history extract is defined in a file called HISDEF.DAT. The HISDEF.DAT file contains the format definition for each transaction to be extracted. The HISDEF.DAT file is located in the MFGSYS directory and is predefined to include item-related transaction definitions. Transaction definitions can be changed or added to the file as necessary.

A transaction must be defined in terms of the screen or task used to perform the transaction and the field information to be included. Field formats are specified, including position, field name, type and length, so the correct records can be located and extracted.

Each transaction definition is entered on a single line using a text editor that creates a standard ASCII text file, such as DOS EDIT. A standard ASCII text file contains no special control codes.

The steps involved in editing the HISDEF.DAT file include:

- identifying the transactions and field information for each history extract
- analyzing the ARCHIVE.FIL file
- defining the transactions in the HISDEF.DAT file

Identifying Transactions and Field Information

To identify each transaction for the history extract, it is helpful to enter the transaction into the system and then analyze the ARCHIVE.FIL file to determine how the information is recorded. Before you begin entering transactions for reference, it is suggested that you back up your database and rename the current ARCHIVE.FIL file so as not to affect your current operations.

1. Determine which history transactions you want to extract and the fields you want to include. For example, you can extract the G/L journal entry transactions entered on the GLJE (G/L Journal Entry) screen.
2. Back up your Fourth Shift database.
3. Rename the current ARCHIVE.FIL file in your MFGSYS directory to ARCHIVE.OLD.
4. Sign onto the system and perform a typical transaction for each history transaction you want to extract. Enter information in as many highlighted fields as possible.
5. Print a report from the screen to record the data entered for the transaction.
6. Sign off the system and go to the MFGSYS directory.
7. Rename the new ARCHIVE.FIL to ARCHIVE.TST and print the ARCHIVE.TST file.
8. Rename the original ARCHIVE file. Rename ARCHIVE.OLD back to ARCHIVE.FIL.
9. Restore the Fourth Shift database using the backup copy.

Analyzing the ARCHIVE File

Each archive record starts with identification information in the first six fields. Field values are as follows:

Field#	Value
1	Transaction Id
2	User Id
3	Date
4	Time

5	Internal Flag
6	Action Code

Note: The first five fields are not considered part of the transaction information for history purposes.

The sixth field, the **Action Code,** identifies the transaction as add, change, delete and so on. For history extract purposes, this **Action Code** field is considered the beginning of transaction information and is used as position one in the HISDEF.DAT record.

The seventh field is often a transaction type indicator, such as T (Top or header) or B (Bottom or line item). The remainder of the information corresponds to the fields entered during the transaction, generally in the order in which the information was entered.

Note: Not all transactions have a transaction type indicator.

1. Using the ARCHIVE.TST printout, locate the information you entered for each transaction. An add transaction for a G/L journal entry looks like this:

```
"GLJE03","AAA","10/11/
1998","009:05:35","0","A","00501","0000","01...
"GLJE03","AAA","10/11/
1998","009:05:52","0","A","00501","0010","01...
"GLJE03","AAA","10/11/
1998","009:06:34","0","A","00501","0020","01...
"GLJE03","AAA","10/11/
1998","009:06:48","0","A","00501","0030","01...
```

2. Locate the fields you have decided to include in the history extract.
3. Determine the position of each selected field. A field's position is based on the number of commas preceding the field, starting with the **Action Code** field as position one. For example, in a G/L journal entry transaction, the fifth field represents the batch source — recurring or manual.
4. Identify the column heading for each selection field.

   The heading can be up to ten characters in length and include upper-case letters and an underbar (_) character only. No special characters are allowed.
5. Identify the type and length of each selected field.

   Field types are C (character), N (number) or D (date).

   - characters include letters and numbers not used in calculations such as zip code or phone numbers. Characters also include punctuation marks and special characters.
   - numbers are calculated and can also have a specified number of decimal places. If no decimal places are entered, the number is assumed to have no decimal places.
   - dates are in the format MMDDYY in the system.

The field length is the number of characters entered for the field. Use the screen documentation or the Data Import Dictionary for reference to determine the field length. The field length does not necessarily have to correspond to the maximum number of entry characters. For example, the **Item** field is 15 characters in length. If all your item numbers are ten characters, you could specify

ten as the **Item** field length. The **Description** field, however, would best be defined as the maximum 35 characters to include all possible uses of the field.

For example, for the G/L journal entry transactions, the transaction and field formats are as follows:

Transaction Format

```
Function Code:  GLJE
Transaction Type Position:  00
```

Field Format

```
Position, Heading, Type, Length;
01, ACD_FLAG, C, 1;
02, BATCH_NO, C, 5;
03, BATCH_SEQN, C, 4;
04, MST_ACT_NO, C, 20;
05, TRANS_DESC, C, 35;
06, TRANS_AMT, N, 14;
07, TRANS_AMT, N, 14;
```

Defining Transactions in the HISDEF.DAT File

Once you have identified the format for each transaction you want to extract, you enter the transaction definition in the HISDEF.DAT file.

Each transaction definition must be entered on a single line and contain no spaces. A transaction definition consists of the transaction and field formats you identified as you analyzed the ARCHIVE file.

1. Begin by printing the current HISDEF.DAT file in the MFGSYS directory.
2. Review the HISDEF.DAT printout to determine if any of your selected transactions are already defined. For those transactions that are already defined, slight modifications might be all that are necessary to match your particular need for data view fields.
3. Edit the HISDEF.DAT file in the MFGSYS directory.

For each transaction definition:

4. Identify the transaction format in the following order. Finish the transaction format with a colon.
    - Function Code
    - field position of the transaction type indicator
    - transaction type

If there is no transaction type indicator, enter 00 for the field position and do not enter a transaction type. For example, the line for the G/L journal entries starts like this: GLJE00:.

If there is a transaction type indicator, enter the field position and then the indicator. For example, the archive record for a customer order line item transaction starts like this: COMT02B:.

5. Continuing on the same line, identify the format for each field in the following order. Separate each characteristic with a comma. Finish the format for one field with a semicolon.
    - position
    - heading
    - type
    - length

The first field format for the G/L journal entries is entered like this:

```
GLJE00:01,ACD_FLAG,C,1;
```

6. Continue to define all the fields you are including in the history extract. Finish the transaction definition with a semi-colon and press ENTER at the end of the line.

   The finished definition for the G/L journal entry looks like this (This is one continuous line):

```
GLJE00:01,ACD_FLAG,C,1;02,BATCH_NO,C,5;03,BATCH_SEQN,C,4;04,
MST_ACT_NO,C,20;05,TRANS_DESC,C,35;06,TRANS_AMT,N,14;07,
TRANS_AMT,N,14;
```

7. Save the HISDEF.DAT file.

If a transaction is defined more than once in the HISDEF.DAT file, the first definition is used and any subsequent definitions are ignored.

Using the DVUD Screen for the History Extract

The transactions defined in the HISDEF.DAT file are used in two Master View:Sub View information paths on the DVUD screen.

- Item-related history transactions can be defined using the Item:History information path and the @TRANS_CODE keyword. The extracted transactions are sorted by item.
- All transactions currently in the ARCHIVE file can be defined using the External:Archive information path and the @TRANS_CODE keyword. The extracted transactions are sorted by date and time.

For example, the data view definition for the External:Archive Data information path and the GLJE history contains the following criteria:

Master View: External

Sub View: Archive Data

Record Selection Criteria:

@TRANS_CODE = GLJE

The Fields window, opened from the **Record Selection Criteria** field, lists the transaction codes identifying the history transactions in the HISDEF.DAT file. Only one transaction code can be specified for each data view definition. History record extracts automatically include all fields.

Once the data view is defined, the information can be extracted just like any other data view.

ACCX – Access Extract

The Access Extract task creates a file of records extracted from the Fourth Shift database for use in a Microsoft Access database. The extract file is based on a specific data view definition established on the DVUD (Data View Definition) screen and includes headings for all fields in the data view. The Access Extract task can read record selection criteria from a defined data view, an external input file and from the task parameter line.

Access Extracts are compatible with Microsoft Access 2000.

Task Reference

Parameters

To request an Access Extract, enter the ACCX task as one of the sequenced tasks in a batch process.

The ACCX task has the following parameters:

Task Parameter	Format	Entry Is...
1: View Name to Extract	VXXXXXXXXXXXXXX	Required
2: Destination Filename	DXXXXXXX.MDB	Required
3: Table Name; Append Database / Overwrite Table Option	TX..X A AO	Optional
4: Record Selection Criteria	C9"X..X"	Optional
5: External Input Filename	IXXXXXXX.XXX	Optional

Parameters 1, 2 and 3 assist in the basic functionality of the Access Extract task. Parameters 4 and 5 expand the task functionality.

Parameter 1: Enter View Name to Extract

Specify the name of the data view to be used for extracting records using the **V** parameter. The data view name must be previously defined on the DVUD (Data View Definition) screen.

Parameter 2: Enter Destination Filename

Specify the name of the file to contain the extracted records using the **D** parameter. The file is created if it does not already exist. If the specified filename already exists it may be appended to or overwritten, depending on the option you choose in Parameter 3. The .MDB extension is expected as part of the fully qualified filename. If no extension is specified, the file is created without an extension. If no path is specified, the file is created in the MFGSYS directory.

Parameter 3: Table Name; Append Database/Overwrite Table Option

Table Name. Use the **T** parameter to specify the name of the table to contain the extracted records. If no table name is specified, extracted records are added to the "Extract" table. The Extract table is created if it does not already exist.

Append Database/Overwrite Table Option. Use the Append Database option to add the data view records to the end of the specified table. In this way, you are adding rows of information to the existing table. Records are added to the end of the "Extract" table if no table name is specified. Enter an **A** if you want to append data view records.

Use the Overwrite Table option to replace an existing table with the records from the extract. In this way, you are overwriting an existing table. If no table name is specified, the "Extract" table is overwritten. Enter **AO** if you want to overwrite a table.

Also consider the following:

- The Append Database and Overwrite Table options may be used only if the destination file exists; the file (database) is not automatically created if it does not exist.
- If the destination file exists, the Append Database or Overwrite Table option must be used. Existing database files are not overwritten with new extract information.
- Data view records can only be appended to a table when the new records have the same data view field layout as the existing table. That is, the columns (data view fields) of records extracted have the same data format and are in the same sequence.
- The Append Database and Overwrite Table options require that the Microsoft Access database be in Access 2000 format. If the database is another version of Access, the options will not complete successfully.

Parameters 4 and 5 expand the functionality of the Access Extract task.

- Parameter 4 allows you to specify record selection criteria on the task parameter line.
- Parameter 5 allows you to specify record selection criteria from an external input file.

Parameter 4: Enter Record Selection Criteria

The **C** parameter is only applicable when the @BSET_PARM_LINE(9) keyword is specified as part of the data view record selection expression. The (9) is entered with the keyword as a unique identifier. The (9) may range from (0)-(9). Parameter 4 may be entered up to ten times per task line.

Two pieces of information must be entered when using Parameter 4. First, enter C9, where 9 is the digit corresponding to the digit specified in the @BSET_PARM_LINE(9) keyword. Second, enter in quotation marks, the selection criteria. The actual criteria must be enclosed in quotation marks for the extract to complete successfully.

Parameter 5: Enter External Input Filename

Specify the filename which contains the record selection expression for the data view using the **I** parameter. The default path is the MFGSYS directory. The record selection expression specified in the external input file takes precedence over any entry made in the **Record Selection Criteria** field on the DVUD screen for the data view.

Example

For example, to request an Access Extract as the first task in the process using Parameters 1, 2 and 3 and the:

- FEBINVTRY data view
- FINVTRY.MDB destination file in the ACCESS directory
- FEBINVENTORY table

the **Seq Num, Task** and **Parameters** fields in the task line are entered like this:

```
01  ACCX  VFEBINVTRY  DC:\ACCESS\FINVTRY.MDB TFEBINVENTORY A
```

Entry Field	Example Value	Description
Seq Num	01	First task in process

Entry Field	Example Value	Description
Task	ACCX	Access Extract
Parameter 1	VFEBINVTRY	Data view name
Parameter 2	DC:\ACCESS\FINVTRY.MDB	Destination file
Parameter 3	TFEBINVENTORY A	Append to table FEBIN-VENTORY

Parameters 4 and 5 expand the functionality of the Access Extract task.

- Parameter 4 allows you to specify record selection criteria on the task parameter line.
- Parameter 5 allows you to specify record selection criteria from an external input file.

For example, the APRILREC.SEL external input file includes the following record selection expression:

ITEM = @BSET_PARM_LINE(1) AND OHND_QTY > 1000

To request an Access Extract as the first task in the process using the:

- APRINVTRY data view
- APRILREC.SEL external input file
- APRINV.MDB destination file
- 18-LM record selection criteria as a task parameter

the **Seq Num, Task** and **Parameters** fields in the task line are entered like this:

```
01  ACCX  VAPRINVTRY  DAPRINV.MDB  IAPRILREC.SEL  C1"18-LM"
```

Entry Field	Example Value	Description
Seq Num	01	First task in process
Task	ACCX	Access Extract
Parameter 1	VAPRINVTRY	Data view name
Parameter 2	DAPRINV.MDB	Destination file
Parameter 5	IAPRILREC.SEL	External input file
Parameter 4	C1"18-LM"	Record selection criteria

Notice that the C1"18-LM" parameter entry corresponds to the @BSET_PARM_LINE(1) keyword entered in the record selection expression in the APRILREC.SEL external input file.

To run the Access Extract, use the BEXE (Batch Process Execution) screen to execute the process in which the ACCX task is entered. Check the LOG file produced if the ACCX task does not execute successfully.

Error Messages

The following errors may be encountered when using the ACCX task. Any of these errors indicates that the extract did not run successfully.

UNABLE TO CREATE DATABASE FILE M:\XXX\XXXXXXXX.MDB

UNABLE TO OPEN DATABASE FILE M:\XXX\XXXXXXXX.MDB

UNABLE TO CREATE TABLE XXXX IN DATABASE M:\XXX\XXXXXXXX.MDB

UNABLE TO OPEN EXISTING TABLE XXXX IN DATABASE M:\XXX\XXXXXXXX.MDB

INVALID MICROSOFT ACCESS VERSION. DATABASE M:\XXX\XXXXXXXX.MDB MUST BE CONVERTED TO MICROSOFT ACCESS 2000 FORMATE BEFORE TRYING TO APPEND.

ERROR WHILE WRITING DATA TO DATABASE M:\XXX\XXXXXXXX.MDB

ASCX – ASCII Extract

The ASCII Extract task creates a Comma Delimited Format (CDF) ASCII file of records extracted from the Fourth Shift database. The extract file is based on a specific data view definition established on the DVUD (Data View Definition) screen and includes headings for all fields in the data view. The ASCII Extract task can read record selection criteria from a defined data view, an external input file and from the task parameter line.

Parameters

To request an ASCII Extract, enter the ASCX task as one of the sequenced tasks in a batch process. See "Batch Processing" in the System Administration manual for the task prerequisites and processing frequency.

The ASCX task has the following parameters:

Task Parameter		Format	Entry Is...
1:	View Name to Extract	VXXXXXXXXXXXXXX	Required
2:	Destination Filename	DXXXXXXX.XXX	Required
3:	Append Extract to File	A	Optional
4:	Record Selection Criteria	C9"X..X"	Optional
5:	External Input Filename	IXXXXXXX.XXX	Optional

Parameters 1, 2 and 3 assist in the basic functionality of the ASCII Extract task. **Parameters** 4 and 5 expand the task functionality.

Parameter 1: Enter View Name to Extract

Specify the name of the data view to be used for extracting records. The data view name must be previously defined on the DVUD (Data View Definition) screen.

Parameter 2: Enter Destination Filename

Specify the name of the file to contain the extracted records. The file will be created if it does not already exist. If the specified filename already exists and the append option is not used, the existing file will be overwritten. Extensions such as .DOC, .TXT or .ASC, for example, can be part of the fully qualified filename. If no extension is specified, the file is created without an extension. If no path is specified, the file is created in the MFGSYS directory.

Parameter 3: Append Extract to File

Indicate whether you want to add the data view records to the end of the specified file. In this way, you are adding rows of information to the existing file. Data view records can only be appended to a file when the new records have the same data view field layout as the existing file. That is, the columns (data view fields) of records extracted have the same data format and are in the same sequence. Enter an **A** if you want to append data view records. The append option **requires** that the destination file exists; the file is not automatically created if it does not exist.

Parameters 4 and 5 expand the functionality of the ASCII Extract task.

- **Parameter** 4 allows you to specify record selection criteria on the task parameter line.
- **Parameter** 5 allows you to specify record selection criteria from an external input file.

Parameter 4: Enter Record Selection Criteria

This parameter is only applicable when the @BSET_PARM_LINE(9) keyword is specified as part of the data view record selection expression. The (9) is entered with the keyword as a unique

identifier. The (9) may range from (0)-(9). **Parameter** 4 may be entered up to ten times per task line.

Two pieces of information must be entered when using **Parameter** 4. First, enter C9, where 9 is the digit corresponding to the digit specified in the @BSET_PARM_LINE(9) keyword. Second, enter in quotation marks, the selection criteria. The actual criteria must be enclosed in quotation marks for the extract to complete successfully.

Parameter 5: Enter External Input Filename

Specify the filename which contains the record selection expression for the data view. The default path is the MFGSYS directory. The record selection expression specified in the external input file takes precedence over any entry made in the **Record Selection Criteria** field on the DVUD screen for the data view.

Example

For example, to request an ASCII Extract as the first task in the process using **Parameters** 1, 2 and 3 and the:

- FEBINVTRY data view
- existing FINVTRY.TXT destination file in the WORK directory

the **Seq Num**, **Task** and **Parameters** fields in the task line are entered like this:

```
01  ASCX  VFEBINVTRY  DC:\WORK\FINVTRY.TXT  A
```

Entry Field	Example Value	Description
Seq Num	01	First task in process
Task	ASCX	ASCII Extract
Parameter 1	VFEBINVTRY	Data view name
Parameter 2	DC:\WORK\FINVTRY.TXT	Destination file
Parameter 3	A	Append to existing file

Parameters 4 and 5 expand the functionality of the ASCII Extract task.

- **Parameter** 4 allows you to specify record selection criteria on the task parameter line.
- **Parameter** 5 allows you to specify record selection criteria from an external input file.

For example, the APRILREC.SEL external input file includes the following record selection expression:

ITEM = @BSET_PARM_LINE(1) AND OHND_QTY > 1000

To request an ASCII EXTRACT as the first task in the process using the:

- APRINVTRY data view
- APRILREC.SEL external input file
- APRINV.TXT destination file
- 18-LM record selection criteria as a task parameter

the **Seq Num, Task** and **Parameters** fields in the task line are entered like this:

```
01  ASCX  VAPRINVTRY  DAPRINV.TXT  IAPRILREC.SEL  C1"18-LM"
```

Entry Field	Example Value	Description
Seq Num	01	First task in process
Task	ASCX	ASCII Extract
Parameter 1	VAPRINVTRY	Data view name
Parameter 2	DAPRINV.TXT	Destination file
Parameter 5	IAPRILREC.SEL	External input file
Parameter 4	C1"18-LM"	Record selection criteria

Notice that the C1"18-LM" parameter entry corresponds to the @BSET_PARM_LINE(1) keyword entered in the record selection expression in the APRILREC.SEL external input file.

To run the ASCII Extract, use the BEXE (Batch Process Execution) screen to execute the process in which the ASCX task is entered. Check the LOG file produced if the ASCX task does not execute successfully.

DBSX – dBASE Extract

The dBase Extract task creates a file of records extracted from the Fourth Shift database for use in a dBase database. The extract file is based on a specific data view definition established on the DVUD (Data View Definition) screen and includes headings for all fields in the data view. The dBase Extract task can read record selection criteria from a defined data view, an external input file and from the task parameter line.

Note: The DBSX task is recommended for English language systems only. The DBSX task creates extract files from Fourth Shift data which is stored in the Microsoft Windows ANSI character set. dBase does not provide a way to communicate the character set in use and assumes that the files use a DOS OEM character set. The resulting data when viewed in dBase or through another application (such as imported into Microsoft Access) result in unrecognizable characters.

Parameters

To request a dBase Extract, enter the DBSX task as one of the sequenced tasks in a batch process.

The DBSX task has the following parameters:

Task Parameter		Format	Entry Is...
1:	View Name to Extract	VXXXXXXXXXXXXXX	Required
2:	Destination Filename	DXXXXXXX.XXX	Required
3:	Append Extract to File	A	Optional
4:	Record Selection Criteria	C9"X..X"	Optional
5:	External Input Filename	IXXXXXXX.XXX	Optional

Parameters 1, 2 and 3 assist in the basic functionality of the dBase Extract task. **Parameters** 4 and 5 expand the task functionality.

Parameter 1: Enter View Name to Extract

Specify the name of the data view to be used for extracting records. The data view name must be previously defined on the DVUD (Data View Definition) screen.

Parameter 2: Enter Destination Filename

Specify the name of the file to contain the extracted records. The file will be created if it does not already exist. If the specified filename already exists and the append option is not used, the existing file will be overwritten. The .DBF extension is expected as part of the fully qualified filename. If no extension is specified, the file is created without an extension. If no path is specified, the file is created in the MFGSYS directory.

Parameter 3: Append Extract to File

Indicate whether you want to add the data view records to the end of the specified file. In this way, you are adding rows of information to the existing file. Data view records can only be appended to a file when the new records have the same data view field layout as the existing file. That is, the columns (data view fields) of records extracted have the same data format and are in the same sequence. Enter an **A** if you want to append data view records. The append option **requires** that the destination file exists; the file is not automatically created if it does not exist.

Parameters 4 and 5 expand the functionality of the dBase Extract task.

- **Parameter** 4 allows you to specify record selection criteria on the task parameter line.
- **Parameter** 5 allows you to specify record selection criteria from an external input file.

Parameter 4: Enter Record Selection Criteria

This parameter is only applicable when the @BSET_PARM_LINE(9) keyword is specified as part of the data view record selection expression. The (9) is entered with the keyword as a unique identifier. The (9) may range from (0)-(9). **Parameter** 4 may be entered up to ten times per task line.

Two pieces of information must be entered when using **Parameter** 4. First, enter C9, where 9 is the digit corresponding to the digit specified in the @BSET_PARM_LINE(9) keyword. Second, enter in quotation marks, the selection criteria. The actual criteria must be enclosed in quotation marks for the extract to complete successfully.

Parameter 5: Enter External Input Filename

Specify the filename which contains the record selection expression for the data view. The default path is the MFGSYS directory. The record selection expression specified in the external input file takes precedence over any entry made in the **Record Selection Criteria** field on the DVUD screen for the data view.

Example

For example, to request a dBase Extract as the first task in the process using **Parameters** 1, 2 and 3 and the:

- FEBINVTRY data view
- existing FINVTRY.DBF destination file in the dBASE directory

the **Seq Num, Task** and **Parameters** fields in the task line are entered like this:

```
01  DBSX  VFEBINVTRY  DC:\DBASE\FINVTRY.DBF  A
```

Entry Field	Example Value	Description
Seq Num	01	First task in process
Task	DBSX	dBASE Extract
Parameter 1	VFEBINVTRY	Data view name
Parameter 2	DC:\DBASE\FINVTRY.DBF	Destination file
Parameter 3	A	Append to existing file

Parameters 4 and 5 expand the functionality of the dBase Extract task.

- **Parameter** 4 allows you to specify record selection criteria on the task parameter line.
- **Parameter** 5 allows you to specify record selection criteria from an external input file.

For example, the APRILREC.SEL external input file includes the following record selection expression:

ITEM = @BSET_PARM_LINE(1) AND OHND_QTY > 1000

To request a dBase Extract as the first task in the process using the:

- APRINVTRY data view
- APRILREC.SEL external input file

- APRINV.DBF destination file
- 18-LM record selection criteria as a task parameter

the **Seq Num, Task** and **Parameters** fields in the task line are entered like this:

```
01  DBSX  VAPRINVTRY  DAPRINV.DBF  IAPRILREC.SEL  C1"18-LM"
```

Entry Field	Example Value	Description
Seq Num	01	First task in process
Task	DBSX	dBASE Extract
Parameter 1	VAPRINVTRY	Data view name
Parameter 2	DAPRINV.DBF	Destination file
Parameter 5	IAPRILREC.SEL	External input file
Parameter 4	C1"18-LM"	Record selection criteria

Notice that the C1"18-LM" parameter entry corresponds to the @BSET_PARM_LINE(1) keyword entered in the record selection expression in the APRILREC.SEL external input file.

To run the dBase Extract, use the BEXE (Batch Process Execution) screen to execute the process in which the DBSX task is entered. Check the LOG file produced if the DBSX task does not execute successfully.

DVUD – Data View Definition

Use this screen to define the information you want to extract from the Fourth Shift database. Many data views can be defined and maintained using the DVUD (Data View Definition) screen. A data view definition consists of a selected Master View: Sub View information path, field selections and record selection criteria. Once a data view is defined, the information can be extracted and used in decision support tools outside of Fourth Shift.

See the Data Export Information Paths manual for more information about the predefined views or the fields included in the views.

Features

Transportation Shortcuts

You can use shortcut keys or transport buttons to go to the following related screens.

Destination	Shortcut Key(s)
Field Selection (from the Record Selection Criteria area)	F8
BSET (Batch Process Setup)	F9
BEXE (Batch Process Execution)	F10

Additional Information

Window	Available From	Shortcut Key(s)
Fields	**Record Selection Criteria**	ALT+F4
Master Views	**Master View**	ALT+F4
Sub-Views	**Sub View**	ALT+F4
Views	**View Name**	ALT+F4

Mass Maintenance

You can perform the following mass maintenance functions by choosing **Mass Maintenance** from the **Tools** menu:

Function
Field Selection; mass selection or deselection

For more information, see "Mass Maintenance Actions" in the Fourth Shift Basics manual.

Web Links

If you use Web UI, you can link to other screens by clicking tabs or hyperlinks.

Go to Screen...	By clicking...
Field Selection	Tab at top of screen

Reports

Data View Definition

Lists the view name, master view, sub view, record selection criteria and the fields included for data views.

Access Method

To generate the report, choose **Print** or **Print Preview** from the **File** menu. The Report screen appears before the report is generated, allowing you to select a range of data for the report. For more information on reporting in general, see "Printing and Reporting" in the Fourth Shift Basics manual.

Report Template

This report is not a template-based report.

Screen Reference

Before You Begin

The DVUD screen uses a set of predefined "tables" to provide access to information in your database. These tables are defined using concepts called Master Views and Sub Views. The Master View and Sub View combination is referred to as an **information path** where:

- **Master View** defines the general category
- **Sub View** defines a sub-category

The combination of Master Views and Sub Views creates different information paths. You create a data view to use one of the predefined information paths to extract data from the database. A data view includes only one Master View: Sub View information path.

After the data view is defined, you use one of the available extract tasks, such as EXLX or ASCX, to create an output file using the data view definition you have created.

See "Designing Your Information Formats" in the **Using the Export Features** section of the System Control manual for more information.

Screen Format

The DVUD screen consists of two primary sections: data view definition and extract contents.

Data View Definition

The Data View Definition section is used to assign the user-defined name for the extract or "query" as well as select the predefined "views" from the database. The name is used to reference the definition when you actually extract the data.

The following windows are used to select existing information:

- **Views window.** This window is used to select an existing data view definition. The Views window displays the existing data views in alphabetical order. The selected data view is entered in the **View Name** field.
- **Master Views window.** This window is used to select a Master View from all existing main categories. The Master Views window displays the existing Master Views in alphabetical order. The selected Master View is entered in the **Master View** field.
- **Sub Views window.** This window is used to select a Sub View which is a subset of data within the Master View you selected. The Sub Views window displays the existing Sub Views in alphabetical order. The selected Sub View is entered in the **Sub View** field.

See the Data Export Information Paths manual for more information about the predefined views or the fields included in the views.

Extract Contents

Once you have defined the data view, you must select which fields should be included in the extract and under what conditions or criteria should be considered when the data is extracted. The following windows are used to assist you is defining extract content:

- **Field Selection window.** This window is used to select specific data view fields to be included in the output. The fields are listed in the output in the order they are listed in the window.

The Field Selection window lists all available fields for the combination of the Master View and Sub View information path. At least one data view field must be selected for each data view defined. The number of fields selected is displayed in the **Field Selected In View** field.

- **Fields window.** This window is used from the **Record Selection Criteria** area when you enter the conditions or criteria for the extract. You can use this window to select fields to include in the record selection expression. The Fields window lists only those fields available for the combination of the Master View and Sub View information path specified.
- **Mass Maintenance window.** You can optionally use this window to select or deselect all fields for the data view extract. The asterisk (*) symbol is added or removed from the fields listed in the Field Selection window.

See the Data Export Information Paths manual for more information about the predefined views or the fields included in the views.

Defining Record Selection Expressions

Record selection expressions allow you to specify the records to include for the Master View:Sub View information path. Record selections are made by entering record selection expressions in the **Record Selection Criteria** field or by using an external input file with the extract tasks. The **Record Selection Criteria** field and the external input file require the same format.

Record selection expressions are statements which compare fields to literal values in order to extract specific records for the data view.

Elements included in the record selection expression can be entered on any line in the **Record Selection Criteria** field on the DVUD screen. However, an individual element may not be divided between two lines. The first example below is a valid record selection expression with elements entered on different lines. The second example, however, is not valid because the **Ohnd_Qty** element is broken between two lines.

Valid Record Selection Criteria:

```
ITEM = "18-LM"
AND
```

```
OHND_QTY =
15000 OR
OHND_QTY = 25000
```

Not Valid Record Selection Criteria:

```
ITEM = "18-LM"
AND
OHND_QTY = 15000 OR OHND_Q
TY = 25000
```

Using Relational Operators

The relational operators available are as follows:

Operator	Function
=	Equal
<>	Not equal
<	Less than
<=	Less than or equal
>	Greater than
>=	Greater than or equal

For example, to extract all records where the **Item** field equals 18-LM, use the = operator. The record selection expression would read:

ITEM = "18-LM"

Record selection expressions must compare a numeric field with a numeric value and a character string field with a character string. For example, the record selection expression:

PLNR > MATL

is invalid because **Plnr** is a character string field and **Matl** is a numeric field.

Using Logical Operators

The logical operators available are AND and OR.

For example, to extract all records where the **Item** field equals 18-LM or equals 24-LM, use the OR operator. The record selection expression would read:

ITEM = "18-LM" OR ITEM = "24-LM"

Using Data View Fields

Data view fields may be entered in the **Record Selection Criteria** field manually or by selecting them from the Fields window.

- A field selected from the Fields window overlays an existing field if the cursor was positioned on that field before the Fields window was opened.
- The field appends if the cursor was positioned at the end of the existing record selection expression. You will be prompted if the selected field does not fit at the end of the current line.

For example, to extract all records where the planner is AAA, use the **Plnr** data view field. The record selection expression would read:

PLNR = "AAA"

The data view field name identifies information based on what is stored in the Fourth Shift database. Not all fields displayed on screens have corresponding fields in the database. For example, a calculated field, such as the total amount of an invoice, is stored in the database as a series of fields that are combined for screen display. You may need to perform these same type of calculations once the data is extracted.

Using Literals

Literal entries specify an exact format for record selection. For example:

Value to Specify	Format	Example
Character string	"Character string"	ITEM = "1000"
Dates	"MMDDYY"	AP_CHK_DAT > "012195"
Numeric values	9999999999.99	BAL_LIMIT = -500
Accounting periods	"PPYY"	ACCTG_PRD = "1095"
Master account numbers	"OO-AAAAA"	MST_ACT_NO = "01-73500"
All values	ALL keyword	ALL

To specify one of the special characters *, ?, !, \ or " embedded in a literal, the special character must be preceded by a backslash (\) in the record selection expression. For example, to extract all records where the **Item** field is equal to 24" WHEEL, the selection expression would read:

ITEM = "24\" WHEEL"

Using Wildcards

Wildcard characters, used with literals in the record selection expression, allow you to select records based on a partially specified literal. Any record that does not match the literal, along with the wildcard character(s), is not extracted.

- The * symbol matches any sequence of zero or more characters
- The ? symbol matches any single character in a specific position
- The ! symbol selects records that do NOT contain the characters listed after the ! symbol

To specify a wildcard character embedded in a literal, the wildcard character must be preceded by the backslash (\) symbol.

Wildcard characters can only be used with the = or <> operators.

The following chart lists examples of record selection expressions using wildcards.

Record Set/Range	Wildcard	Example Output
Records beginning with 18	18*	18-LM, 18235
Records ending with -LM	*-LM	18-LM, 24-LM
Records containing 18 anywhere	*18*	18-LM, 231825
Five-character records beginning with 1 and ending with 5	1???5	12345, 18235
Records with 71 as the first two characters, a variable as the third, and ending with -01	71?-01	715-01, 71A-01

Record Set/Range	Wildcard	Example Output
Records which don't start with 18	!18*	24-LM, 12345

Wildcard characters are not available when specifying a range in the record selection expression.

Using Parentheses

Parentheses can be used to indicate the order in which criteria should be evaluated. The expressions within the parentheses take precedence over those outside the parentheses.

In the absence of parentheses, expressions are evaluated from left to right, with the relational operators having precedence over the logical operators.

The following table lists examples of record selection expressions using parentheses.

Record Selection	Extract description
(OHND_QTY > 1000 AND (ITEM = "18-LM" OR ITEM = "24-LM"))	On-hand inventory greater than 1000 and either item 18-LM or 24-LM
OHND_QTY > 1000 AND ITEM = "18-LM" OR ITEM = "24-LM"	On-hand inventory greater than 1000 for item 18-LM and records with any on-hand inventory for item 24-LM

Using Keywords

The following keywords can be used in a record selection expression:

- ALL
- @BSET_PARM_LINE(9)
- @REMEMBERED_FIELD
- @POP_UP("text")
- @TRANS_CODE

Keywords entered in a record selection expression are not enclosed in quotation marks. For example, to extract all records for the **Item** field remembered on a screen, use the @REMEMBERED_FIELD keyword. The record selection expression would read:

ITEM = @REMEMBERED_FIELD

See "Selecting Data View Records" in the System Control manual for more details on the functionality of these keywords.

Selecting Data View Records

Record selection expressions are entered in the **Record Selection Criteria** field or input from an external file specified on the parameter line for the extract task.

Selecting All Records

Use the ALL keyword in the **Record Selection Criteria** field to select all records for the data view.

Selecting a Record Set

A set of information for a data view can be specified by using any of the relational or logical operators. The following chart lists examples of record selection expressions which specify record sets.

Record Set	Record Selection Expression
Items equal to 18-LM	ITEM = "18-LM"
Items not equal to 18-LM	ITEM <> "18-LM"
Items greater than 18-LM	ITEM > "18-LM"
Items equal to 18-LM with on-hand inventory greater than 1000	ITEM = "18-LM" AND OHND_QTY > 1000
Items equal to 18-LM or 24-LM	ITEM = "18-LM" OR ITEM = "24-LM"

Selecting a Record Range

A range of information for a data view can be specified using relational operators in conjunction with logical operators. The following chart lists examples of record selection expressions which specify record ranges.

Record Range	Record Selection Expression
Items between 18-LM and 24-LM	ITEM > "18-LM" AND ITEM < "24-LM"
Items from 18-LM through 24-LM	ITEM >= "18-LM" AND ITEM <= "24-LM"

Selecting History Records

Item-related transactions from the ARCHIVE file as well as item-related, online history can be extracted using the @TRANS_CODE keyword and the following information paths:

- The Item:History information path is used to extract item-related, online history.
- The External:Archive Data information path is used to extract information from the ARCHIVE file.

Each history record has a unique layout and is identified by a transaction code. History records identified by the same transaction code can be extracted by a data view.

For example, to extract history records associated with the BILL screen, use the Item:History information path and the following record selection expression:

@TRANS_CODE = BILL

The Fields window, opened from the **Record Selection Criteria** field, lists the transaction codes currently available for the selected information path. The transaction code is not enclosed in quotation marks in the record selection expression.

History record extracts automatically include all fields. The Field Selection window is not available when defining a data view using the Item:History or External:Archive Data information path.

Note: The = operator is the only relational operator available for use with the @TRANS_CODE keyword. Logical operators cannot be used in conjunction with the @TRANS_CODE keyword.

Selecting Summary and Detail Records

Some data views contain both summary and detail information for each record extracted. The summary information is the same for each detail record. Data views with this summary/detail layout include a **New** data view field to extract only summary records for manipulation purposes. In this way, summary totals can be calculated correctly.

Each **New** data view field has either a T (true) or F (false) value. To extract summary records only, the **Record Selection Criteria** uses a **New** value of T.

For example, the Item:Inventory information path extracts a summary/detail record for each location identified for an item. The summary information in each record includes item identification and totals for on-hand, in-inspection, on-hold, shipping, on-order, WIP and allocation quantities. The detail information in each record includes the specific stk-bin identifier and the inventory quantity in the location.

To extract the inventory records so that summary and detail information is available for manipulation, use the record selection expression:

ALL

To extract the inventory records so that only summary information is available for manipulation, use the record selection expression:

NEW_ITEM = "T"

Only the first record for each item is extracted so that summary totals are not repeated.

Parameters

The @BSET_PARM_LINE(9) keyword allows records to be extracted based on the record selection criteria specified on the parameter line for an extract task. In this way, a generic data view can be used to extract a very controlled set of records that can change each time the extract task is run. Up to ten @BSET_PARM_LINE(9) keywords may be used in each record selection expression. The (9) is entered with the keyword as a unique identifier. The (9) may range from (0) - (9). The corresponding number is entered with the C9 parameter on the task line.

For example, to extract records with items and on-hand inventory specified on the parameter line, the record selection expression for the ITEMINV data view could read:

ITEM = @BSET_PARM_LINE(1) AND OHND_QTY = @BSET_PARM_LINE(2)

An extract task is set up on the BSET (Batch Process Setup) screen after the data view is defined. The task line sets up the actual **Record Selection Criteria** for the data view. Using the same data view, you can extract data for any number of specified items. For example, to extract specific records for the item 18-LM with on-hand inventory greater than 1000 using the ITEMINV data view, the **Seq Num, Task** and **Parameters** fields are entered like this:

```
01  ASCX  VITEMINV  DITEMINV.TXT  A  C1"18-LM"  C2"1000"
```

Notice that the C1 parameter entry corresponds to the @BSET_PARM_LINE(1) keyword entry in the record selection expression and the C2 corresponds to the @BSET_PARM_LINE(2) keyword entry.

Selecting Data Using User Input

The @POP_UP("text") keyword allows you to enter selection criteria when you run an extract. The Data Export Selection window opens from the BEXE screen during batch processing. The "text" appears in the Data Export Selection window to prompt you for an entry. The "text" string can be a maximum of 40 characters.

The @POP_UP("text") keyword, along with the CIM Customizer Module, allows you to request the extract online by pressing an activation key from any screen. Pressing the activation key opens the Data Export Selection window prompting you for the records to extract.

For example, to extract a range of items based on user input, the record selection expression for the ITEMINV data view could read:

ITEM >= @POP_UP("ITEM FROM") AND ITEM <= @POP_UP("ITEM THRU")

An extract task is set up on the BSET (Batch Process Setup) screen after the data view is defined. To extract ASCII data for records using the ITEMINV data view, the **Seq Num, Task** and **Parameters** fields are entered like this:

```
01  ASCX  VITEMINV  DITEMINV.TXT
```

The Data Export Selection window opens when the extract task is run, prompting you to enter the beginning of the record range. The number of times the window opens corresponds to the number of @POP_UP("text") keywords used in the record selection expression. The **Item From** field corresponds to the "text" entered for the first @POP_UP("text") keyword in the record selection expression.

Enter an item in the **Item From** field and press ENTER. The **Item Thru** field opens prompting you to enter the end of the record range. Notice that the **Item Thru** field corresponds to the "text" entered for the second @POP_UP("text") keyword in the record selection expression.

Enter an item in the **Item Thru** field and press ENTER. Records for the items specified for the range are automatically extracted.

Selecting Data Using the Current Screen

The @REMEMBERED_FIELD keyword allows you to extract records from any screen based on a defined data view and the information the system remembers from screen to screen. The @REMEMBERED_FIELD keyword, along with the CIM Customizer Module, allows you to request an online extract by pressing an activation key, and in effect, press ESC to remember the key fields on the current screen.

The following chart lists examples of record selection expressions using keywords.

Record Set/Range	Record Selection Expression
Items equal to a remembered field on a screen	ITEM = @REMEMBERED_FIELD
A range of items to be specified by user input	ITEM > @POP_UP(“ITEMS FROM”) AND ITEM < @POP_UP(“ITEMS THRU”)
Items and on-hand inventory equal to record selection criteria specified on the task line	ITEM = @BSET_PARM_LINE(1) AND OHND_QTY = @BSET_PARM_LINE(2)

Selecting Data View Fields

The data view fields available for each Master View:Sub View information path are listed in the Field Selection window. At least one data view field must be selected. The number of fields selected is displayed in the **Fields Selected in View** field.

Selecting Individual Data View Fields

Open the Field Selection window to select the data view fields you want to include in the data view. For each data view field you want included, scroll to the data view field and use an asterisk (*) to

select the field. An asterisk mark (*) is then displayed in front of the selected data view field. Press ENTER to close the Field Selection window. Press ENTER again to update your field selections.

As an option, you can choose the **Select all Fields** options. An asterisk (*) is then displayed in front of every field listed in the Field Selection window.

Deselecting Individual Data View Fields

A selected data view field can be eliminated from the data view by removing its corresponding asterisk mark (*). Scroll to the data view field listed in the Field Selection window and press the asterisk (*) key. The corresponding mark (*) is removed. Move down the list, as necessary, to eliminate data view fields. Press ENTER to close the Field Selection window. Press ENTER again to update your field selections.

As an option, you can choose the **Deselect all Fields** line. All of the asterisks (*) in front of the selected data view fields are removed.

Fields

Created

Created is the date that the process or view was created.

Where Used: BSET; DVUD

Fields Selected in View

Fields Selected in View indicates the number of fields which have been selected for the current data view. At least on field must be selected for a data view.

Where Used: DVUD

Function

Function codes are four-character abbreviations for screen names. Each screen has a unique code used for identification and transportation. For example, ITMB identifies the Item Master screen. Entry is 4 alphanumeric characters.

Where Used: screens and reports

Last Executed

Last Executed is the last date that this process was executed or the view was extracted.

Where Used: BSET; DVUD

Last Modified By

Last Modified By is the last date that information for this view was changed.

Where Used: DVUD

Master View

Master View identifies the first half of the path by which records are extracted from the database. The selection of the **Master View** defines the **Sub-Views** available for the data view definition.

Where Used: DVUD

Modified

Modified is the date of the last modification to the process or view.

Where Used: BSET; DVUD

Owner

Owner identifies the user ID of the original creator or current owner of the process or view.

Where Used: BSET; DVUD

Record Selection Criteria

Record Selection Criteria specifies the records to include in the data view by using data view fields, logical operators, relational operators, literal values, keywords and wildcard characters.

Where Used: DVUD

Sub View

Sub View is the second half of the information path related to the specific **Master View** selected. The selection of the **Sub View** defines the fields available for the data view definition.

Where Used: DVUD

Total Executions

Total Executions is the total number of times data has been extracted using this view definition.

Where Used: DVUD

View Description

View Description is the user-defined description of this view.

Where Used: DVUD

View Name

View Name is the user-defined identification for a data view definition. A data view definition consists of a selected **Master View:Sub-View** information path and selection criteria. After the data view is defined, the **View Name** can be selected for a database extract. Entry is any alphanumeric combination of up to 15 characters. No spaces are allowed within the **View Name**.

Where Used: DVUD

EXLX – Excel Extract

The Excel Extract task creates a file of records extracted from the Fourth Shift database for use in a Microsoft Excel spreadsheet. The extract file is based on a specific data view definition established on the DVUD (Data View Definition) screen and includes headings for all fields in the data view. The Excel Extract task can read record selection criteria from a defined data view, an external input file and from the task parameter line.

Excel Extracts are compatible with Microsoft Excel 95 and later versions.

Parameters

To request an Excel Extract, enter the EXLX task as one of the sequenced tasks in a batch process.

The EXLX task has the following parameters:

Task Parameter		Format	Entry Is...
1:	View Name to Extract	VXXXXXXXXXXXXXX	Required
2:	Destination Filename	DXXXXXXX.XLS	Required
3:	Worksheet Name	TX..X	Optional
4:	Record Selection Criteria	C9"X..X"	Optional
5:	External Input Filename	IXXXXXXX.XXX	Optional

Parameters 1, 2 and 3 assist in the basic functionality of the Excel Extract task. **Parameters** 4 and 5 expand the task functionality.

Parameter 1: Enter View Name to Extract

Specify the name of the data view to be used for extracting records using the **V** parameter. The data view name must be previously defined on the DVUD (Data View Definition) screen.

Parameter 2: Enter Destination Filename

Specify the name of the file to contain the extracted records using the **D** parameter. The file will be created if it does not already exist. If the specified filename already exists, the existing file will be overwritten. The .XLS extension is expected as part of the fully qualified filename. If no extension is specified, the file is created without an extension. If no path is specified, the file is created in the MFGSYS directory.

Parameter 3: Enter Worksheet Name

Specify the name of the worksheet to contain the extracted records using the **T** parameter. If no worksheet name is specified, the extracted records are added to the default SHEET 1 worksheet.

Parameters 4 and 5 expand the functionality of the Excel Extract task.

- **Parameter** 4 allows you to specify record selection criteria on the task parameter line.
- **Parameter** 5 allows you to specify record selection criteria from an external input file.

Parameter 4: Enter Record Selection Criteria

The **C** parameter is only applicable when the @BSET_PARM_LINE(9) keyword is specified as part of the data view record selection expression. The (9) is entered with the keyword as a unique identifier. The (9) may range from (0)-(9). Parameter 4 may be entered up to ten times per task line.

Two pieces of information must be entered when using Parameter 4. First, enter C9, where 9 is the digit corresponding to the digit specified in the @BSET_PARM_LINE(9) keyword. Second, enter in quotation marks, the selection criteria. The actual criteria must be enclosed in quotation marks for the extract to complete successfully.

Parameter 5: Enter External Input Filename

Specify the filename which contains the record selection expression for the data view using the **I** parameter. The default path is the MFGSYS directory. The record selection expression specified in the external input file takes precedence over any entry made in the **Record Selection Criteria** field on the DVUD screen for the data view.

Example

For example, to request an Excel Extract as the first task in the process using **Parameters** 1 and 2 and the:

- FEBINVTRY data view
- FINVTRY.XLS destination file in the EXCEL directory
- FEBINVENTORY worksheet

the **Seq Num, Task** and **Parameters** fields in the task line are entered like this:

```
01  EXLX  VFEBINVTRY  DC:\EXCEL\FINVTRY.XLS TFEBINVENTORY
```

Entry Field	Example Value	Description
Seq Num	01	First task in process
Task	EXLX	Excel Extract
Parameter 1	VFEBINVTRY	Data view name
Parameter 2	DC:\EXCEL\FINVTRY.XLS	Destination file
Parameter 3	TFEBINVENTORY	Destination worksheet

Parameters 4 and 5 expand the functionality of the Excel Extract task.

- **Parameter** 4 allows you to specify record selection criteria on the task parameter line.
- **Parameter** 5 allows you to specify record selection criteria from an external input file.

For example, the APRILREC.SEL external input file includes the following record selection expression:

ITEM = @BSET_PARM_LINE(1) AND OHND_QTY > 1000

To request an Excel Extract as the first task in the process using the:

- APRINVTRY data view
- APRILREC.SEL external input file
- APRINV.XLS destination file
- 18-LM record selection criteria as a task parameter

the **Seq Num, Task** and **Parameters** fields in the task line are entered like this:

```
01  EXLX  VAPRINVTRY  DAPRINV.XLS  IAPRILREC.SEL  C1"18-LM"
```

Entry Field	Example Value	Description
Seq Num	01	First task in process
Task	EXLX	Excel Extract
Parameter 1	VAPRINVTRY	Data view name
Parameter 2	DAPRINV.XLS	Destination file
Parameter 5	IAPRILREC.SEL	External input file
Parameter 4	C1"18-LM"	Record selection criteria

Notice that the C1"18-LM" parameter entry corresponds to the @BSET_PARM_LINE(1) keyword entered in the record selection expression in the APRILREC.SEL external input file.

To run the Excel Extract, use the BEXE (Batch Process Execution) screen to execute the process in which the EXLX task is entered. Check the LOG file produced if the EXLX task does not execute successfully.

PRTX – Printed Extract

The Printed Extract task creates a report based on a specific data view definition established on the DVUD (Data View Definition) screen and includes headings for fields in the data view up to 132 characters. The Printed Extract task can read record selection criteria from a defined data view, an external input file and from the task parameter line.

The PRTX task produces a report based on the fields included in the view selected. The fields appearing on the report will vary depending on the data view definition.

Parameters

To request a Printed Extract, enter the PRTX task as one of the sequenced tasks in a batch process.

The PRTX task has the following parameters:

Task Parameter		Format	Entry Is...
1:	View Name to Extract	VXXXXXXXXXXXXXX	Required
2:	Record Selection Criteria	C9"X..X"	Optional
3:	External Input Filename	IXXXXXXX.XXX	Optional

Parameter 1 assists in the basic functionality of the Printed Extract task. **Parameters** 2 and 3 expand the task functionality.

Parameter 1: Enter View Name to Extract

Specify the name of the data view to be printed. The data view name must be previously defined on the DVUD (Data View Definition) screen. The report is designed to include up to 132 characters in width. The total number of report characters is calculated on a field-by-field basis using the greater length of the field or the field title. When fields exist beyond the 132-character width, the fields are not included on the report.

Parameter 2: Enter Record Selection Criteria

This parameter allows you to specify record selection criteria on the parameter line. It is only applicable when the @BSET_PARM_LINE(9) keyword is specified as part of the data view record selection expression. The (9) is entered with the keyword as a unique identifier. The (9)may range from (0)-(9). **Parameter** 2 may be entered up to ten times per task line.

Two pieces of information must be entered when using **Parameter** 2. First, enter C9, where 9 is the digit corresponding to the digit specified in the @BSET_PARM_LINE(9) keyword. Second, enter in quotation marks, the criteria to be extracted. The actual criteria to be extracted must be enclosed in quotation marks for the extract to complete successfully.

Parameter 3: Enter External Input Filename

Specify the filename which contains the record selection expression for the data view. The default path is the MFGSYS directory. The record selection expression specified in the external input file takes precedence over any entry made in the **Record Selection Criteria** field on the DVUD screen for the data view.

Example

For example, the MARREC.SEL external input file includes the following record selection expression:

ITEM = @BSET_PARM_LINE(1) AND OHND_QTY > 1000

To request a PRINTED EXTRACT as the first task in the process using the:

- MARINVTRY data view
- 18-LM record selection criteria
- MARREC.SEL external input file

the **Seq Num, Task** and **Parameters** fields in the task line are entered like this:

```
01  PRTX  VMARINVTRY  IMARREC.SEL  C1"18-LM"
```

Entry Field	Example Value	Description
Seq Num	01	First task in process
Task	PRTX	Printed Extract
Parameter 1	VMARINVTRY	Data view name
Parameter 3	IMARREC.SEL	External input file
Parameter 2	C1"18-LM"	Record selection criteria

Notice that the C1"18-LM" parameter entry corresponds to the @BSET_PARM_LINE(1) keyword entered in the record selection expression in the MARREC.SEL external input file.

To run the Printed Extract, use the BEXE (Batch Process Execution) screen to execute the process in which the PRTX task is entered. Check the LOG file produced if the PRTX task does not execute successfully.

When fields exist beyond the 132-character report width, a report truncation message is written to the LOG file.