ENQUIRE

User Manual

Version 3.1

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About this manual

In writing this manual, we assume that you have working knowledge, although not internal knowledge, of IMAGE and the HP3000.

All references to IMAGE in this manual and throughout the SUPERDEX and ENQUIRE packages also apply to TurboIMAGE and TurboIMAGE/XL unless otherwise noted.

This manual is arranged in the following format:

Section 1 provides an *Overview* of the ENQUIRE package, its features, capabilities, and benefits.

Section 2 describes ENQUIRE *Operation*, including installation, functions, redirecting output, invoking the program, and function key assignments.

Section 3 discusses utilizing data dictionaries for each database, referred to as *Database profiles*.

Section 4 reviews the procedures for defining, modifying, deleting, copying, and executing *Search profiles*, the heart of ENQUIRE functionality. Included are various methods of reporting data to the screen and printer.

Section 5 describes how to use ENQUIRE from other HP3000 and PC programs.

Section 6 shows various facilities for *Customizing ENQUIRE*, including custom-defined VPLUS forms and message catalogs, which facilitate Native Language Support.

Appendix A discusses considerations for *Database structural changes*, their impact on ENQUIRE database and search profiles, and how to restore consistency when the structure of a database accessed by ENQUIRE is modified.

Appendix B examines ENQUIRE's *Internal structures*, including the structure of the DBENQ database that holds database and search profile configuration and determining the access method used by ENQUIRE when executing a search profile.

Appendix C documents ENQUIRE's *Maximum limits*.

Appendix D lists all of ENQUIRE's *Error and exceptional conditions* with messages, their meanings, and recommended actions.

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Section 1 Overview

The ENQUIRE package provides a convenient means for locating entries in any database using several advanced methods and outputing them in various formats, including screen display, printed report, Lotus 1-2-3, dBASE, and other microcomputer formats.

Chapter 1 Why ENQUIRE?
Description Explains the basic benefits and capabilities of ENQUIRE.

Chapter 2 How ENQUIRE works
Description Defines concepts and overall features.

Chapter 3 Access methods
Description Used to qualify entries using ENQUIRE, both with and without SUPERDEX.

Why ENQUIRE ?

ENQUIRE was created to perform powerful retrievals against IMAGE, TurboIMAGE, and TurboIMAGE/XL databases in a very quick, user-friendly manner using a different philosophy and methodology than QUERY/3000 and other reporting tools.

Unlike other packages, ENQUIRE separates the specification of the inquiry parameters (the databases and datasets to access, fields to search on, fields to output, etc.) and of the search criteria (actual data values) into two distinct operations. In ENQUIRE, a *search profile* that describes an inquiry is created in *definition* mode, and is then invoked with search criteria specified in *execution* mode.

For example, a search profile could be defined that finds customers in a CUSTOMER-MASTER dataset with balances over a certain amount which have been outstanding for more than a certain number of days, and then outputs the associated invoice numbers, dates, and amounts from a INVOICE-HEADERS dataset. Upon executing this search profile, the user would be prompted for and specify the amount and number of days outstanding, and the qualifying entries would be retrieved.

Because end users supply only the search values in response to pre-defined prompts, they do not require any knowledge of database structure or need to remember any commands or syntax; they just access the search profile by name and fill in the blanks.

Search profiles are typically defined by data processing personnel by specifying the database(s) to access (up to 4) and then "checking off" the datasets to access (up to 16), fields to select on (up to 16), and fields to report (up to 128). This process is simple enough to be done by even a regular user.

In defining search profiles, only the "what" (bases, sets, fields) is specified--the "how" is figured out by ENQUIRE automatically. ENQUIRE chooses the quickest, most efficient database access methods, whether using IMAGE paths, SUPERDEX paths, or serial reads. SUPERDEX paths provide the fastest and most flexible access, although ENQUIRE permits limited SUPERDEX-type access (partial key, generic key, greater-than/less-than, and range retrievals) on IMAGE keys!

To make ENQUIRE search profiles more user-friendly and output more meaningful, custom prompts, header titles, and edit masks may optionally be defined for any field. To speed up this process, a *database profile* may be created for each database to define these attributes globally, thereby acting as a data dictionary.

Default input and output VPLUS forms are provided, and may be replaced with custom forms where desired. Additional customizing may be done by redefining error and status messages. These facilities are also used in ENQUIRE's Native Language Support.

Once users locate the desired entries in execution mode, they may display them on the screen, print them, or output them to a file in a pre-defined format for further use on the HP3000 or for transfer to a microcomputer. If using Reflection, ENQUIRE can automatically download files from the HP3000 to the microcomputer simply by specifying a microcomputer file name for output. ENQUIRE can output data in various popular microcomputer formats for use by dBASE, Lotus, various word processors, and other programs on PCs and Macintosh.

In addition, if you see that ENQUIRE can solve a lot of your reporting needs but wish you could provide its capabilities from within your own programs, no problem. ENQUIRE's *batch facility* allows search profiles to be executed with specified selection values by handling ENQUIRE as a son process and passing it the required parameters. This same facility can also be utilized from HP3000-to-PC transfer program command files (such as those supported by Reflection) to transfer files output in microcomputer format to micros.

We know that you'll find ENQUIRE to be truly user-friendly: both in defining and executing search profiles. And coupled with its support of SUPERDEX access methods and popular output formats, you'll be amazed at its speed, power, simplicity, and usefulness.

How ENQUIRE works

The **ENQUIRE** program provides a powerful, user-friendly facility in which various data retrieval screens called *search profiles* are defined to perform specific inquiries against:

- up to 16 fields in
- up to 16 datasets in
- up to four databases

The search profile configuration is entirely screen-driven and requires that the bases, sets, and fields to access be defined. It also requires that for key fields the desired access method (IMAGE, SUPERDEX, or sequential) be specified; if multiple SI-paths exist for a selection field, the preferred key must be indicated.

The search profiles do not contain the data values to search for; rather, the search criteria are specified at execution time and may include:

- partial keys
- generic keys
- greater-than/less-than constructs
- not-equal-to constructs
- ranges
- values for multiple fields
- multiple values for a field (boolean operators)

For searches against fields that are configured as SUPERDEX SI-keys, the following may additionally be selected on:

- for keyworded SI-paths, any significant word contained in the SI-key
- for grouped SI-paths, any value in any SI-key in the group
- multiple values for a field, using boolean operators

Up to 128 fields related to each entry may be output in various formats:

- displayed on the screen
- printed
- written to a file in binary format
- written to a file in Lotus 1-2-3 format for use on a microcomputer
- written to a file in dBASE format for use on a microcomputer
- written to a file in comma/quote-delimited format for use on a microcomputer
- written to a file in tab-delimited format for use on a Macintosh

While the ENQUIRE package is designed for use with SUPERDEX, it does not require that a database be configured for SUPERDEX to operate. ENQUIRE will use IMAGE paths, SI-paths, sequential searches, or a combination of these to access data. The desired access method for each selection field is specified in the search profile configuration.

Additionally, the capability of defining data dictionaries for all databases exists, permitting global input and output field attributes to be defined once for each database and overridden for specific search profile requirements. The dictionary for each database is referred to as a *database profile*.

The database profile

A database profile may optionally be defined for an entire database or for selected datasets within a database, permitting global attributes to be configured once and then automatically utilized for all search profiles that access a database when they are executed.

Default database-profile parameters may be overridden for any search profile when defined. It is recommended that database profiles be created in their entirety before defining any search profiles to set the desired default parameters.

Database profiles are created in ENQUIRE's *definition mode* (accessible by using the **DEF** entry point) and saved in a special internal database (named **DBENQ**). They may also be modified or deleted in this mode.

Each database profile is assigned the name of the database it profiles and includes several optional attributes:

- the prompts used to identify each item on input
- the headings used to identify each item on output
- the decimal point position for numeric fields
- edit masks for alpha and numeric fields

The search profile

The search profile is also created in ENQUIRE's definition mode and saved in the DBENQ database, and may also be modified or deleted in this mode.

The search profile does not contain the values to search for--these are entered when the search profile is executed by an authorized user in *execution mode*.

In the definition mode, each search profile is assigned an arbitrary name, and its *input format* and *output format* specifications are defined.

The input format specification includes:

- the search profile password
- the database(s) to access
- the dataset(s) to access
- the field(s) to search
- the type of access (SUPERDEX, IMAGE, or sequential)
- if multiple SI-paths exist for a selection field, which one to use
- the prompts used to identify each item

The output format specification includes:

- the field(s) to display
- the heading(s) used to identify each item
- any edit masks for alpha and numeric fields
- the decimal point position for numeric fields
- the output format (screen, file, special format)

Input and output field attributes default to those defined in the database profile and may be overridden. If not defined in a database profile, they default to their item names with no edit masks or decimal values.

Security

In defining and modifying database and search profiles, access to sets and items is restricted by the IMAGE user class that corresponds to the database password specified. Sets and items to which access is restricted may not be included in a search profile, nor are they displayed for selection.

Each database and search profile may optionally be protected by an arbitrary eight-character password that restricts execution to only those users who supply the correct password. This password may be changed as desired by modifying the search profile.

Access methods

In defining a search profile, the bases, sets, and items to access are specified. Additionally, the method of access (IMAGE, SUPERDEX, or sequential) must be specified for selection fields. For selection fields that are indexed by more than one SI-path, the SI-path to use must be indicated.

In executing a search profile, only the data values are specified. ENQUIRE will use the configured access method for each selection field for which a value is specified. For IMAGE keys configured for IMAGE access in which a value other than a full key value is specified, a sequential read is performed, because IMAGE does not support partial-key retrieval.

Screen formats

All the VPLUS forms used for defining and executing search profiles generated by default by ENQUIRE, but may alternatively be custom-defined in FORMSPEC.

ENQUIRE operates entirely in block mode, and therefore must be run from a terminal or microcomputer that supports block mode.

Native language support

All forms and message catalogs are supplied in several different languages, which may be selected by a :RUN... ;PARM or via file equations, as explained in the *Operation* section.

Because all screens used in ENQUIRE are VPLUS forms, these forms may easily be adapted to any native language. Message catalogs are in GENCAT format, and may also be easily modified in any editor.

Refer to the *Customizing ENQUIRE* section for instructions for setting the native language for your installation, as well as modifying the message catalog and VPLUS forms.

Online help facility

For each input and output form in ENQUIRE there is a corresponding help form which provides explanatory information. The corresponding help form may be displayed from any regular form by selecting the f1 function key, which is labelled **HELP**. To return to the regular form, select the f8 function key.

Batch facility

ENQUIRE search profiles are normally executed online but may alternatively be run from batch jobs with pre-defined search values using ENQUIRE's batch facility.

This same technique may be used to enable ENQUIRE search profiles to be executed from within application programs, and for invoking ENQUIRE from within HP3000-to-PC transfer package command files, such as those supported by Reflection.

The batch facility is invoked by running ENQUIRE with its $STDIN redirected to a specially-formatted file containing the search profile name, search criteria, and other parameters.

Access methods

This section overviews the various methods available in ENQUIRE (with and without SUPERDEX) to access data in IMAGE databases.

Multiple keys in master and detail datasets

Up to 16 fields in any dataset may be defined for selection in a search profile, which may be in a single dataset or multiple datasets.

For a selection field that is an SI-key and specified for SUPERDEX access, ENQUIRE performs an indexed-sequential retrieval via SUPERDEX. For IMAGE keys specified for IMAGE access, ENQUIRE performs either a keyed or chained read. A serial read is performed for any field that is not a key in either IMAGE or SUPERDEX, or which has been explicitly marked for sequential access.

Concatenated keys containing multiple fields

One selection field is defined for each SI-subkey in the SI-key and the values are recombined by ENQUIRE. Not all SI-subkeys need to be included as selection fields--ENQUIRE will perform a retrieval using the SI-path regardless.

Concatenated SI-keys are transparent in ENQUIRE retrievals. Whichever SI-subkeys are included as selection fields in the search profile are prompted for individually and internally combined by ENQUIRE.

Access is quickest when all SI-subkeys in the SI-key are used as selection fields. If this is not the case, it is desirable to have at least the first SI-subkey used as selection field; the more SI-subkeys thereafter are included, the more efficient the access.

Sorted sequential retrieval

Entries are unconditionally returned in sorted sequential order for entries qualified in indexed access mode along an SI-path. To read all the entries in a set in ascending order, specify a blank selection value.

If IMAGE access is performed, entries are returned in either chained or sequential order, based on the type of IMAGE access performed.

Keyword retrieval

☞ keyword retrieval is available only in the SUPERDEX II package.

Any selection field that is configured as a keyworded SI-key or the first SI-subkey in a concatenated SI-key is treated as keyworded.

A comparison is made based only on the keyword length configured for the SI-path.

Generic and partial key retrieval

Partial key retrieval may be performed against IMAGE fields or SI-keys by specifying the partial key value appended with an **@**, e.g. **HEWL@**. This will locate all entries that match on the significant characters followed by anything.

Greater-than, less-than, and range retrieval

These types of retrievals may be performed against any IMAGE field or SI-key and are faciliated by embedding special operators in the search value for any field.

Greater-than retrieval is accomplished by prefixing the search value with the **>** operator (e.g. **>1000**): greater-than-or-equal-to retrieval is done using the **>=** operator. Less-than retrieval uses the **<** operator, and less-than-or-equal-to retrieval uses the **<=** operator as a prefix, and not-equal-to retrieval uses the **<>** operator.

Range retrievals are performed by using the **:** operator between two selection values. For example, a range search to find all the entries with amounts between 500 and 1000, inclusively, is specified with **500:1000**.

Grouped retrieval

☞ grouped retrieval is available only in the SUPERDEX II package.

Grouped retrieval may be performed against grouped SI-paths. If the field that is the first configured SI-key in the group is used as a selection field, all SI-keys in the group are automatically searched when the search profile is executed.

A comparison is made based only on the SI-key length configured for the SI-path.

Super-grouped retrieval

☞ super-grouped retrieval is available only in the SUPERDEX II package.

For retrieval against super-grouped SI-paths, ENQUIRE will use the super-group to perform the retrieval but will restrict the output to only those datasets that were selected for output in the search profile.

In configuring the search profile for super-group access, select the master set to be accessed before its related detail sets.

Relational access: multiple criteria retrieval

☞ multiple criteria retrieval is available only in the SUPERDEX II package.

ENQUIRE supports retrieval by multiple criteria by allowing multiple values to be specified for a single field. The Boolean operations AND, OR, and AND NOT may be performed against the multiple values by delimiting the values with the operators **+**, **,**, and **–** respectively.

Relational access: multiple fields, sets, bases

Relational queries may be performed across multiple fields, datasets, and databases in ENQUIRE. ENQUIRE permits up to 16 fields in up to 16 datasets in up to four databases to be involved in a search profile.

The bases to access are defined on one form, and then additional forms are completed for each database/dataset combination. This is done for both input and output formats. There must be a physical or logical linkage between datasets and databases. ENQUIRE will determine, when the search profile is defined, if a linkage can be made and will reject the attempted configuration and display an error message if it cannot. ENQUIRE internally performs all lookups necessary to complete the retrieval.

Entries must match on all specified search values and exist in all datasets and databases in order to qualify.

Custom SI-path access

Retrievals may be performed using custom SI-paths (created via the SIUSER procedure). If any custom SI-paths have been defined for a selected dataset, ENQUIRE displays the literal **"CUSTOM INDEX"** for selection in order to perform retrieval by the SIUSER path.

Section 2 Operation

Installation

This section assumes that you have already loaded SUPERDEX on your system, as described in the separate *SUPERDEX loading instructions*.

ENQUIRE functions

The ENQUIRE program performs several functions against database profiles and search profiles:

- define a new database profile or search profile
- modify an existing database profile or search profile
- delete an existing database profile or search profile
- execute an existing search profile

These functions are described in the following chapters.

Redirection to other groups/accounts

ENQUIRE's internal control files (as well as the ENQUIRE program) are by default contained in PUB.SUPERDEX. The files are:

- **DBENQ** database in which database and search profiles are saved
- **FOENQ***nnn* VPLUS forms file containing configuration, input, and output forms
- **ERENQ***nnn* error and status message catalog

where *nnn* is the language ID number (*langid*) of the native language used (Native-3000 is 000). Refer to the *Customizing ENQUIRE* section for information about running ENQUIRE in other languages).

If these files are moved to or duplicated in another group or account, it is necessary to issue fully-qualified :FILE equations to redirect access, as shown:

```
:FILE DBENQ.PUB.SUPERDEX=DBENQ.mygroup.myacct
:FILE FOENQ000.PUB.SUPERDEX=FOENQ000.mygroup.myacct
:FILE ERENQ000.PUB.SUPERDEX=ERENQ000.mygroup.myacct
```

In ENQUIRE, databases are specified by their unqualified names (without group and account), so a file equation is required for databases that do not reside in the logon group and account, for example:

```
:FILE OEDB=OEDB.DATA.SALES
:FILE CUSTDB=CUSTDB.DATA.SALES
```

would be issued if the OEDB and CUSTDB databases reside in DATA.SALES. This provides a convenient means for alternating between test and production databases when developing database and search profiles.

Redirecting output to printer

Entries printed via ENQUIRE's print function are by default printed on the system line printer (device class **LP**). You may select an alternate printer by issuing a file equation to it for the formal file designator **ENQLIST**; for example:

```
:FILE ENQLIST;DEV=LASER
```

would direct all printed output to the printer that corresponds to device class **LASER**.

A printer other than device class LP may alternately be selected by specifying it in the `Output file name` field of the output form (refer to the *Reporting* chapter of the *Search profiles* section for details).

Invoking and using the ENQUIRE program

By default, the ENQUIRE program is contained in PUB.SUPERDEX and may be run in one of two ways. To define, modify, or delete, or execute database and search profiles, run ENQUIRE with the **DEF** entry point:

```
:RUN ENQUIRE.PUB.SUPERDEX,DEF
```

This method is for use in developing search profiles and is not intended for end users.

To execute existing search profiles:

```
:RUN ENQUIRE.PUB.SUPERDEX
```

This is intended for end users, since it does not permit access to development features.

Remember, ENQUIRE operates in block mode: press **TAB** (not RETURN) to go forward one field and **SHIFT + TAB** (simultaneously) to go back one field. You may alternatively use the cursor keys. Press **ENTER** when you are finished with a form.

Function key operation

Throughout ENQUIRE, function keys are consistently available to provide various actions. When in definition mode, the function keys are defined as follows:

f1	HELP	display corresponding (context-sensitive) help form
f2	PREVIOUS PAGE	go back to previous page of multi-page form
f3	NEXT PAGE	skip ahead to next page of multi-page form
f4	PRINT	print the current form
f5	PREVIOUS FORM	go back to previous definition form
f6	NEXT FORM	skip ahead to next definition form
f7	SAVE CURRENT	save profile as defined thus far
f8	MENU	go back to Main Menu, flush changes

In execution mode, the following function keys are available on the input selection form:

f1	HELP	display corresponding (context-sensitive) help form
f2	LIST ALL	display all qualifying entries
f3	LIST SUMS	total and display sum of similar entries
f4	PRINT	output results to specified or default printer
f5	STORE	output results to specified file in configured format
f8	MENU	go back to Main Menu

In execution mode, the following function keys are available on the output selection form:

f1	HELP	display corresponding (context-sensitive) help form
f2	PREVIOUS ENTRIES	re-display previous screen of qualifying entries
f3	NEXT ENTRIES	display next screen of qualifying entries
f5	PREVIOUS PAGE	re-display the previous screen of fields for the current entry
f6	NEXT PAGE	display the next screen of fields for the current entry
f7	SELECT/OUTPUT	enter a new search selection, or output qualifying entries
f8	MENU	go back to Main Menu

Section 3 Database profiles

This section describes *database profiles*, which serve as data dictionaries that are accessed when defining search profiles.

Database profiles serve as data dictionaries for search profiles that are subsequently defined and executed. They are optional, and each contains global input and output field attributes for a database or for selected datasets within a database.

Attributes configured in a database profile are automatically applied to all search profiles as they are created, eliminating the need to re-specify these attributes when defining each search profile. It is possible, however, to override the database profile attributes in any search profile.

Database profiles are accessed when defining search profiles and define the default parameters for each search profile that accesses the database. Database-profile parameters may be overridden by any search profile. It is recommended that database profiles be created in their entirety before defining any search profiles to set the desired defaults.

Defining a new database profile

Main menu

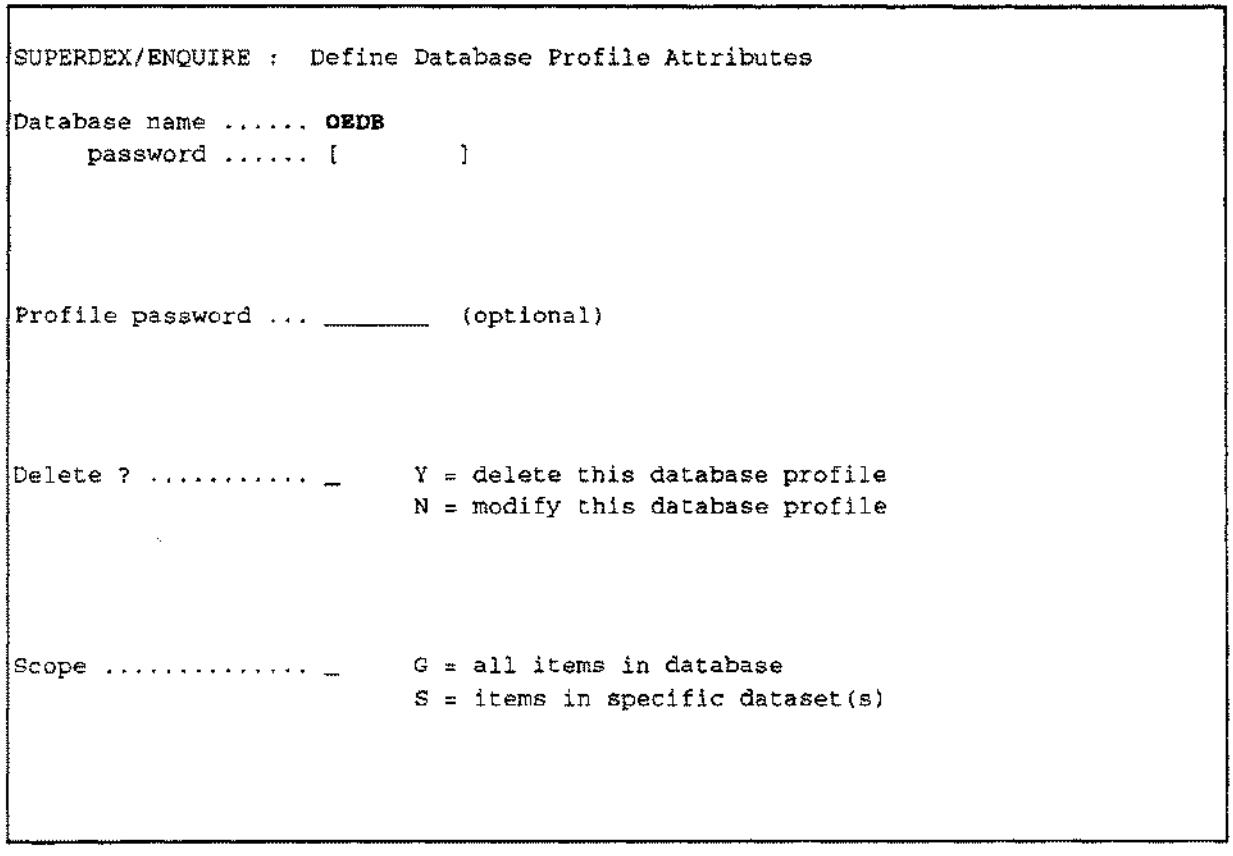
To define a new database profile, run ENQUIRE with the **DEF** entry point, and then enter **B** in the `Option` box. Then enter the unqualified name of the database (without group and account--a file equation must already be set for databases that do not reside in the logon group an account) to profile, and leave the password blank (if you enter the name of an existing database profile, ENQUIRE will automatically go into modify/delete mode rather than add mode).

```
SUPERDEX/ENQUIRE :  Main Definition Menu

Select an option ..... B     D = define new Search profile or
                                 modify existing Search profile

                             B = define new Database profile or
                                 modify existing Database profile

                             C = copy existing Search profile under
                                 new name and modify

                             X = execute existing Search profile


Profile name ..... OEDB_____
    password ..... [          ]   (existing profile only)


New profile name ..... _____      (Copy option only)
```

Once both fields have been specified, press **ENTER** to process the screen's contents.

After completing the Main Menu, a second form is issued which defines:

- database name
- database password
- database profile password
- whether to delete or modify the current database profile
- whether to define all items in the base or only in specific sets



Defining the database and its password

The database name is predisplayed. Enter a database password below the database name. Ensure that the password specified grants read access to all the datasets and items that are required for the database profile, as only those sets and items will be displayed and available for selection; inaccessible sets and items are restricted and therefore not displayed. If you are logged on as the database creator, you may enter the creator password (;).

The password is not echoed to the screen for security reasons.

Defining the database profile password

Access to the database profile may optionally be restricted by assigning an arbitrary password of up to eight characters to the profile. This password must be specified when attempting to modify or delete the profile.

Selecting the database or a specific dataset to configured

The recommended method is to first define attributes for all items in the database, and then to override them as necessary for specific fields in specific datasets. For example, if the item NAME is used in both the CUSTOMERS and VENDORS datasets, different labels and headings (e.g. `Customer name` and `Vendor name`) should be defined for each to avoid confusion for users when executing associated search profiles.

G is predisplayed which may be overwritten by **S**.

Editing and saving the current form

You may edit the form further by skipping forward from field to field with the TAB key or backward with the SHIFT and TAB keys in combination.

Once the form has been completed, press the **ENTER** key to save it in ENQUIRE's internal database, or a function key to perform a different action.

Selecting the dataset to configure

If **S** was typed in (ie. that items in a specific dataset should be profiled), a separate dataset definition form is displayed. This form is used to select which dataset to define attributes for.

```
SUPERDEX/ENQUIRE :  Define Dataset for Formats and Labels      base: OEDB

-> Select one dataset by marking it with an X :

_ M CUSTOMERS              _ M ORDER-HEADERS          _ D ORDER-LINES
  D SI
```

Each dataset is indicated by name and prefixed with a code defining the dataset type (**A**=automatic master, **M**=manual master, **D**=detail). Datasets are listed in the order in which they appear in the base's dataset list.

Up to 48 datasets are displayed on one screen; additional sets are shown on one or more additional pages that are automatically displayed when **ENTER** is pressed after completing the current page. You may skip between the pages by using the **f2** and **f3** function keys.

Select the dataset to be configured by entering an **X** in the adjacent box, and press **ENTER** to proceed to the next form or a function key to perform the desired action. As you can only select one dataset at a time, repeat the action if you wish to configure more datasets.

Defining input and output field attributes

An input/output field attribute definition form is displayed for either all items in the database or in the specified dataset. The base name or base and set names are indicated in the upper right corner. This form defines:

- the prompt to display for each input field
- the heading to display for each output field
- edit mask specifications for alphanumeric and numeric fields
- the decimal point position for numeric fields

```
SUPERDEX/ENQUIRE :  Define Labels & Formats   base/set : OEDB  /

Item              Prompt              Heading             Edit spec Decimal
----------------- ------------------- ------------------- ------------- --
N CUSTOMER-NO     _________________   _________________   _____________  _
C CUSTOMER-NAME   _________________   _________________   _____________  _
C ADDRESS-1       _________________   _________________   _____________  _
C ADDRESS-2       _________________   _________________   _____________  _
C CITY            _________________   _________________   _____________  _
C STATE           _________________   _________________   _____________  _
N ZIP-CODE        _________________   _________________   _____________  _
N PHONE-AREA-C    _________________   _________________   _____________  _
N PHONE-PREFIX    _________________   _________________   _____________  _
N PHONE-SUFFIX    _________________   _________________   _____________  _
C CUSTOMER-ABBR   _________________   _________________   _____________  _
N ORDER-NUMBER    _________________   _________________   _____________  _
C ORDER-TYPE      _________________   _________________   _____________  _
N ENTRY-DATE      _________________   _________________   _____________  _
C PO-NUMBER       _________________   _________________   _____________  _
N BRANCH-LOCAT    _________________   _________________   _____________  _
```

For an entire database, each item is indicated by name and listed in the order of the database item list. For a dataset, each field is indicated by its item name and listed in the order of the dataset item list.

Defining prompts

By default, in executing a search profile each selection field value is prompted for by its item name. Alternatively, a different *prompt* of up to 20 characters may be defined to label each field. This feature is especially useful for item names that are not self-explanatory.

Defining headings

A *heading* is displayed in printed reports and included in some store formats. By default, in executing a search profile, each output field is headed by its item name. Alternatively, a different heading of up to 20 characters (or up to 10 characters if the search profile is configured to store in DBF format) may be defined for each field. If a heading exceeds the field length, it is broken into two lines when reported.

This feature is also especially important for item names that are not self-explanatory.

Defining edit mask specifications

Various *edit masks* may be defined for reformatting alphanumeric and numeric values when they are displayed, such as adding dollar signs or decimal points to dollar amounts.

These edit masks are the same as those used in QUERY/3000's REPORT facility, with the addition of a *list sums* option. The following characters can be used in various combinations in one or more positions in the edit mask for each item or field:

X **Any character (alphanumeric items only)**
For alphanumeric items (data types X or U), each **X** represents one character in each corresponding position in the output field. Enough **X**s to cover the length of the field should be specified; otherwise, the value will be truncated. For example, the edit mask **X-X-X-X** would reformat the value "ABCD" as `A-B-C-D` but the mask **XX** would reformat it as `AB`.

9 **Any numeric character (numeric items only)**
For numeric items (data types I, J, K, P, R or Z), each **9** represents one number in each corresponding position in the output field.

Z **Blank zero-replacement character (numeric items only)**
Same as **9**, but leading zeroes are replaced with blanks.

***** **Asterisk zero-replacement character (numeric items only)**
Same as **Z**, but leading zeroes are replaced with ***** s.

$ **Dollar sign (numeric items only)**
Same as **Z**, but the first zero in the field is replaced by a **$**.

. **Decimal point (numeric items only)**
Position of the decimal point; can only appear once in an edit mask.

CR **Credit sign (numeric items only)**
The characters **CR** are displayed in the two rightmost positions in the mask for negative values, immediately following the value. For positive values, two blanks are displayed instead.

- **Negative sign (numeric items only)**
Same as **CR**, but instead a - is displayed in the rightmost position for negative values; for positive values, one blank is displayed instead.

X **Literal insertion character (alphanumeric or numeric items)**
Any printable ASCII character (except the reserved characters **X**, **9**, **Z**, *, **$**, **CR**, and **-**) is displayed literally in its corresponding position in the edit mask. Any insertion character appearing in the edit mask to the left of the leftmost significant digit of the value is replaced with a blank or asterisk (depending on the zero-replacement character specified).

S **List sums (numeric items only)**
Causes ENQUIRE to total the value of this field for all similar entries and display the total on a single line rather than displaying each entry if the LIST SUMS display format is selected. **S** must be specified in the first position of the edit mask.

The following tables show examples of edit masks and their effects on Character (data types U and X) and Numeric (data types I, J, K, R, P, and Z) item values:

Alphanumeric value	*Edit mask*	*Result*
ABCD	X-X-X-X	A-B-C-D
013188	XX/XX/XX	01/31/88
A34B	X//X-X-X-X	A//3-4-B-*
ABCD	- - - X	- - - A

Numeric value	*Edit mask*	*Result*
0059	$$$,999	$059
001024	ZZZ,ZZZ	1,024
-0010555	$$,$$$.99CR	$105.55CR
00010555	$$,$$$.99CR	$105.55
-0010555	$$,$$$.99-	$105.55-
15039250	$,$$$,$$$.99CR	$150,392.50
00049	*****	***49
044240474	999-99-9999	044-24-0474
-2145	$,$%$$.99	$21.45
209 and 10 on two entries	S	219+

Defining decimal point position

Because numeric item values are stored with no decimal point, the decimal point position should be specified for numeric items that contain decimal values (excluding items of data type R). This is done in the *decimal* field.

The decimal point position is used in both input and output formats. Microcomputer programs generally assume that the decimal point is fixed, so it must be specified here. If no decimal point is specified (either in this field or in the edit mask), 0 is assumed and the decimal point is suppressed.

If an edit mask that includes a decimal point is specified, the decimal field value must correspond to the position of the decimal point in the edit mask.

Completing the database profile

Up to 16 fields are shown on a single page. If the base or set contains more than 16 items or fields, the other fields are displayed on one or more additional pages which are automatically displayed when ENTER is press after completing the current page. You may skip between the pages with the f2 and f3 function keys.

Once all the items or fields in a base or set have been configured, press ENTER to save the attributes and return to the previous form or to the menu or to a function key to perform a different action.

Modifying or deleting a database profile

Modifying a database profile

Existing database profiles may be modified in very much the same way and using the same forms as when defining a new database profile. Refer to the *Defining a new database profile* chapter for a discussion.

To modify an existing database profile, run ENQUIRE with the **DEF** entry point, then specify **B** in the Main Menu `Option` box and enter the name and password of the database profile (if one was assigned), as shown:

```
SUPERDEX/ENQUIRE :  Main Definition Menu


Select an option ..... B      D = define new Search profile or
                                  modify existing Search profile

                              B = define new Database profile or
                                  modify existing Database profile

                              C = copy existing Search profile under
                                  new name and modify

                              X = execute existing Search profile



Profile name ..... OEDB_________
    password ..... [           ]   (existing profile only)


New profile name ..... ___________   (Copy option only)
```

The next form for defining databases and output will already be filled out with the existing database profile configuration, as shown:

```
SUPERDEX/ENQUIRE :  Define Database Profile Attributes

Database name ..... OEDB
     password ..... [        ]



Profile password ... _______  (optional)



Delete ? ........... N      Y = delete this database profile
                            N = modify this database profile



Scope .............. _      G = all items in database
                            S = items in specific dataset(s)
```

Enter a valid database password in the space provided below the data base name, making sure that it grants access to all sets and items that are needed for the database profile. If modifying an existing database profile, use the same password that was specified when the database profile was defined. The password is not echoed to the screen for security reasons.

The `Delete` box is initialized to **N**, indicating that by default you are able to modify but not delete the database profile.

You may make any changes required to this form. To retain the current database profile password, do not modify the field; to remove the password, enter a backslash (\) in the first position in the password field. Press **ENTER** to proceed to the next form, and after completing, subsequent forms. Once you have made the required modifications, you may save the search profile before finishing by pressing the **f7** function key. To flush all modifications and retain the original database profile, press **f8** to be returned to the Main Menu.

Deleting a database profile

An existing database profile may be deleted by specifying **B** at the Main Menu selection prompt and entering the name and password of the database profile.

On the next form, enter a valid password for the database in the space provided below the data base name. The password is not echoed to the screen for security reasons.

Enter **Y** in the `Delete` box to indicate that you want to delete (rather than modify) the current database profile. The database profile is deleted immediately.

Section 4 Search profiles

☞ **The Micro Interface formats are available as a separate option in ENQUIRE.**

This section discusses *search profiles*, which are used for various custom database inquiries.

Search profiles perform specific pre-defined searches involving between one and 16 selection fields in up to 16 datasets in up to four databases. They may reference database profiles to determine input and output field attributes, although these attributes may be overridden as necessary within a search profile.

Chapter 1 **Defining a new search profile**
Description describes the procedures for *Defining a new search profile*, including specifying the base(s), set(s), and item(s) for selection and output.

Chapter 2 **Modifying or deleting a search profile**
Description reviews the methods of *Modifying or deleting a search profile*.

Chapter 3 **Copying a search profile**
Description shows the method for creating a new search profile based on an existing search profile by *Copying a search profile*.

Chapter 4 **Executing a search profile**
Description discusses the procedures for and options in *Executing a search profile*, including the various search criteria formats for accomplishing partial key, generic, range, and other types of searches.

Chapter 5 **Reporting**
Description the methods of *Reporting* entries located by use of a search profile are discussed, including printing and output in various HP3000 and microcomputer file formats.

Defining a new search profile

Main menu

To define a new search profile, run ENQUIRE with the **DEF** entry point, and then enter **D** in the `Option` box. Then enter a unique arbitrary name for the search profile of up to 14 characters, and leave the password blank. (If you enter the name of an existing search profile, ENQUIRE will automatically go into modify/delete mode rather than add mode.)

```
SUPERDEX/ENQUIRE :  Main Definition Menu


Select an option .......... D     D = define new Search profile or
                                      modify existing Search profile

                                  B = define new Database profile or
                                      modify existing Database profile

                                  C = copy existing Search profile under
                                      new name and modify

                                  X = execute existing Search profile


Profile name .............. SHIPPING_____
    password .............. [            ]    (existing profile only)


New profile name ......... _______________    (Copy option only)
```

Do not use the name of an existing database as the search profile name unless you want to define a database profile containing the global attributes for a database--refer to the *Defining a new database profile* chapter in the *Database profiles* section for a discussion.

Once both fields have been specified, press **ENTER** to process the screen's contents.

After completing the Main Menu, a form for defining the databases to access and the output format for the search profile is displayed. It may be filled in with:

- up to four databases to access
- a password for each database specified
- whether default input and output forms should be used or if custom forms have been prepared
- the format in which to output the data
- the optional search profile password
- whether to modify or delete the current profile

```
SUPERDEX/ENQUIRE :  Define Database(s) and Global Attributes

Database name(s) ...  _______  _______  _______  _______
     password(s) ... [       ] [       ] [       ] [       ]


Custom forms ? ..... N      Y = custom user-defined forms
                            N = standard pre-defined forms

Output format ...... _      _ = screen and printer only
                            1 = BINARY : binary format for HP3000
                            2 = SD     : self-describing format for HP3000
                            3 = ASCII  : comma/quote-delimited for PC wps
                            4 = WK1    : work file for Lotus 1-2-3 on PC
                            5 = DBF    : DBF file for dBASE on PC
                            6 = MAC    : tab-delimited for Apple Macintosh

Profile password ... _____ (optional)


Delete ? ........... N      Y = delete this search profile
                            N = modify this search profile
```

Defining databases and their passwords

Up to four databases may be specified for access in a search profile. Enter the unqualified name of each database (a file equation must already be set for databases that do not reside in the logon group and account). If less than four databases will be accessed, they must be left-justified.

The order in which the databases are specified is important, as databases are searched left-to-right, so each database must be logically dependent on a previously-defined database, with the leftmost database searched first, the next database second, etc.

A password for each database is entered below its name, and determines the user class that will be assigned to a user executing the search profile. Ensure that the password specified grants read access to all the datasets and items that are required for the search profile, as only those sets and items will be displayed and available for selection (inaccessible sets and items are restricted and therefore not displayed on subsequent configuration forms).

If the required access to a database is obtainable only by using multiple user classes, the database may be specified more than once with a different password for each occurrence.

Passwords are not echoed to the screen for security reasons.

Forms specification

By default, ENQUIRE will generate standard VPLUS forms for entering and displaying data when the search profile is executed. The `Custom forms` box is therefore initialized to `N`.

The capability exists for using custom-defined VPLUS forms for input and output instead of using the default forms, in which case `Y` is entered. If so, the forms files must already exist--refer to the *Customizing ENQUIRE* section for information about creating custom forms.

Output format

ENQUIRE can report entries a user selects when executing the search profile in one or more of the following ways:

- display on the terminal screen
- list on a printer
- store to a binary-format file for use on the HP3000
- store to a self-describing (SD) file for use on the HP3000 and/or for conversion to a DIF file on a PC
- store to a file in comma/quote-delimited format for use by microcomputer programs, such as word processors
- store to a WK1-format file for use on a PC in Lotus 1-2-3
- store to a DBF-format file for use on a PC in dBASE
- store to a file in tab-delimited format for use on a Macintosh

By default, data may be output in screen and line printer format only, as specified by leaving the `Output format` box blank. The other options are referred to as *store* options, and one may be selected by indicating its corresponding number (**1-6**) in the `Output format` box.

1 BINARY The data is written in the exact same format as it is stored in the database, useful for processing by HP3000 programs.

2 SD The special Self-Describing format which is required by some programs on the HP3000.

3 ASCII Fields are separated by a comma (,) and character strings are enclosed in double quotes ("). Entries are stored packed, with leading and trailing blanks removed from each field. This format is required by many PC programs.

4 WK1 Format for Lotus 1-2-3 worksheets (formerly called **WKS**). Contains a header line with item names or labels followed by the output table. The table itself has the range name **DATA** and can be read alone with the Lotus 1-2-3 command **\FCCRDATA**.

5 DBF Format for dBASE III and dBASE III Plus database files. Headings (if defined) or item names are used as dBASE field names and truncated to 10 characters as required. All embedded special characters are converted to underscores. Subitems of compound IMAGE items are reassigned to discrete fields, with each field suffixed with the relative subitem number.

6 MAC Popular format for various programs on the Macintosh. Each field is separated by a comma (,) and each entry is terminated by a **RETURN**.

Defining the search profile password

Access to the search profile may optionally be restricted by assigning an arbitrary password of up to eight characters. This password must be specified when executing the search profile, as well as when attempting to modify or delete the profile.

Editing and saving the current form

You may edit the form further by skipping forward from field to field with the **TAB** key or backward with the **SHIFT+TAB** keys in combination.

Once the form has been completed, press the **ENTER** key to save it in ENQUIRE's internal database. To flush the form without saving it, press the **f8** function key and you will return to the Main Menu.

Defining datasets to access

After the database/output form has been completed and saved, a separate dataset definition form is displayed for each database specified in the previous form, as identified in the upper right corner. Each form (one per database) defines:

- the datasets to access
- the order in which to access them

```
SUPERDEX/ENQUIRE :  Define Dataset(s)                        base: OEDB

->Select up to 16 datasets and specify order by marking a letter(A - Z)

_ M CUSTOMER              _ M ORDER-HEADERS         _ D ORDER-LINES
  D SI
```

Each dataset is indicated by name and prefixed with a code defining the dataset type (**A**=automatic master, **M**=manual master, **D**=detail). Datasets are listed in the order in which they appear in the base's dataset list.

The datasets to be accessed in this search profile must be indicated, with one or more datasets per database, up to a maximum of 16 datasets for the search profile. Only the datasets that are required to satisfy the search requirements should be selected. SI-datasets (sets named "SI*n*") may not be selected.

Datasets are selected by entering an alphabetic character (**A**-**Z**) in the box to the left of each. Letters may be used to specify the order in which the datasets are to be accessed (**A** is first, **B** is second, etc.). The same letter may be assigned to multiple datasets, which causes ENQUIRE to sequence the datasets in the order shown on the form (the order of the database set list).

If more than one dataset in a database is used in a search profile, the sequence in which the datasets are accessed at execution time is important. ENQUIRE must start its search with a dataset upon which other datasets depend, either directly or indirectly. This dataset is referred to as the *primary* dataset, and all other datasets in the database (called *secondary* datasets) are dependent on the primary set or to a preceding secondary set. A dependence between two datasets is established by the presence of either:

- an IMAGE path relating a master and detail dataset
- an IMAGE search field with the same item name as an item in another dataset
- an SI-path related to each set that references the same item in both sets

You must identify the primary dataset by specifying an **A** in the selection box. Secondary datasets are identified by other letters, where **B** must be dependent on **A**, **C** must be dependent on **A** or **B**, and so on. ENQUIRE is capable of determining the order of dependence once the primary dataset has been defined, so it is sufficient to identify the primary set (with an **A**) and the others with some other letter. In fact, ENQUIRE will change the order of dataset selection if dependence cannot be established within the sequence specified. Dependence must exist for all datasets specified.

Up to 48 datasets are displayed on one screen; additional sets are shown on one or more additional pages that are automatically displayed when **ENTER** is pressed after completing the current page. You may skip between the pages by using the **f2** and **f3** function keys.

Once all the datasets in a database have been displayed and the required ones selected, press **ENTER** to proceed to define the datasets for the next database (if multiple databases were defined on the database/output form). To instead flush the form without saving it, press the **f8** function key and you will be returned to the Main Menu. Other function keys may be used to perform different actions, as documented in the *Operation* section.

Defining fields for selection

After you have completed and saved the dataset definition form(s), a separate field definition form is displayed for each dataset selected in the previous form. The base and set names are indicated in the upper right corner. Each form (one per dataset) defines:

- the fields to access
- the order in which to access them
- the type of access for fields that are used as IMAGE search fields or SUPERDEX SI-keys or SI-subkeys

Fields are listed in the order in which they appear in the dataset item list. Each field is indicated by its item name and immediately prefixed with **C** or **N**, which indicates in what format the data is represented, where:

- **C** = character (alphanumeric IMAGE data types U and X)
- **N** = numeric (IMAGE data types I, J, K, R, P and Z)

A leading prefix indicates the type(s) of key usage for fields that are used as IMAGE or SUPERDEX keys, where:

- I = IMAGE search field
- S = one SUPERDEX SI-key
- IS = IMAGE search field and one or more SUPERDEX SI-keys
- SS = multiple SUPERDEX SI-keys
- s = second, third or fourth SI-subkey in a concatenated SUPERDEX SI-key

```
SUPERDEX/ENQUIRE :  Define Selection Item(s)  base/set: OEDB  /CUSTOMERS

->Select up to 16 items;specify order by marking first column with A-Z;
  specify access by marking second column for IMAGE or SUPERDEX(I or S)

__ I  N CUSTOMER-NUMBER __    C CUSTOMER-ABBR   __ SS C CUSTOM-NAME
__  S C ADDRESS-1       __    C ADDRESS-2       __  S C CITY
__    C STATE           __    N ZIP-CODE        __    N PHONE-AREA-CO
__    N PHONE-PREFIX    __    N PHONE-SUFFIX
```

For each dataset in a search profile, there is a maximum number of keys that can be selected, namely:

- one type "I" key and two type "S" keys or
- one type "I" key and one type "S" key or

additionally, a type "S" key may be selected for the first dataset only.

The fields to be searched at execution time must be indicated, with one or more fields per dataset, up to a maximum of 16 items for the search profile. Only the fields that are required to satisfy the search requirements should be selected.

Fields are selected by specifying one or more letters in the box to the left of each. In the first column of the box, enter an alphabetic character (**A**–**Z**) in the box. Letters may be used to specify the order in which the datasets are to be accessed (**A** is first, **B** is second, etc.). The same letter may be assigned to multiple datasets, which causes ENQUIRE to sequence the fields in the order shown on the form (the sequence of the dataset's item list).

For fields that are used as keys in IMAGE or SUPERDEX, indicate the type of access desired by specifying **I** for IMAGE, **S** for SUPERDEX, or blank for non-key access in the second column of the box. Fields that are defined as SUPERDEX SI-keys inherit their SUPERDEX attributes. For grouped SI-keys, only one SI-subkey defined in the SI-path needs to be a selection field. If neither **I** nor **S** is specified for any selection field for a dataset, the dataset is read sequentially.

The field that links the current dataset with the primary or other secondary set is always implicitly selected and may not be changed (nor does it count toward the search profile maximum of 16 items).

Up to 48 fields are displayed on a single page; if the dataset contains more than 48 fields, the other fields are displayed on one or more additional pages which are automatically displayed when ENTER is press after completing the current page. You may skip between the pages with the f5 and f6 function keys.

Once all the fields in a dataset have been displayed and the required ones selected, press ENTER to proceed to define the fields for the next dataset (if it was previously selected). To instead flush the entire search profile without saving it, press the f8 function key and you will be returned to the Main Menu. Other function keys may be used for various actions.

Defining SUPERDEX SI-path access

After you have completed and saved the selection item form(s), ENQUIRE checks which SUPERDEX SI-paths exist for each selection item. If it finds that there are multiple SI-paths configured for any chosen selection item (type "SS"), a separate SUPERDEX path definition form is displayed for each such selection item to specify:

- which of multiple SI-paths to utilize

```
SUPERDEX/ENQUIRE : Define SUPERDEX path     base/set: OEDB/CUSTOMERS

-> Select one of the SUPERDEX SI-paths displayed by marking with an X :

      SI-path name        SI-subkey items
-------------------------------------------------------------------------
_     CUSTOMER-NAME     : CUSTOMER-NAME
_   K CUSTOMER-NAME-KW  : CUSTOMER-NAME
```

The name and SI-subkeys of each SUPERDEX SI-path is displayed prefixed by its type:

- K = keyworded
- G = grouped or super-grouped

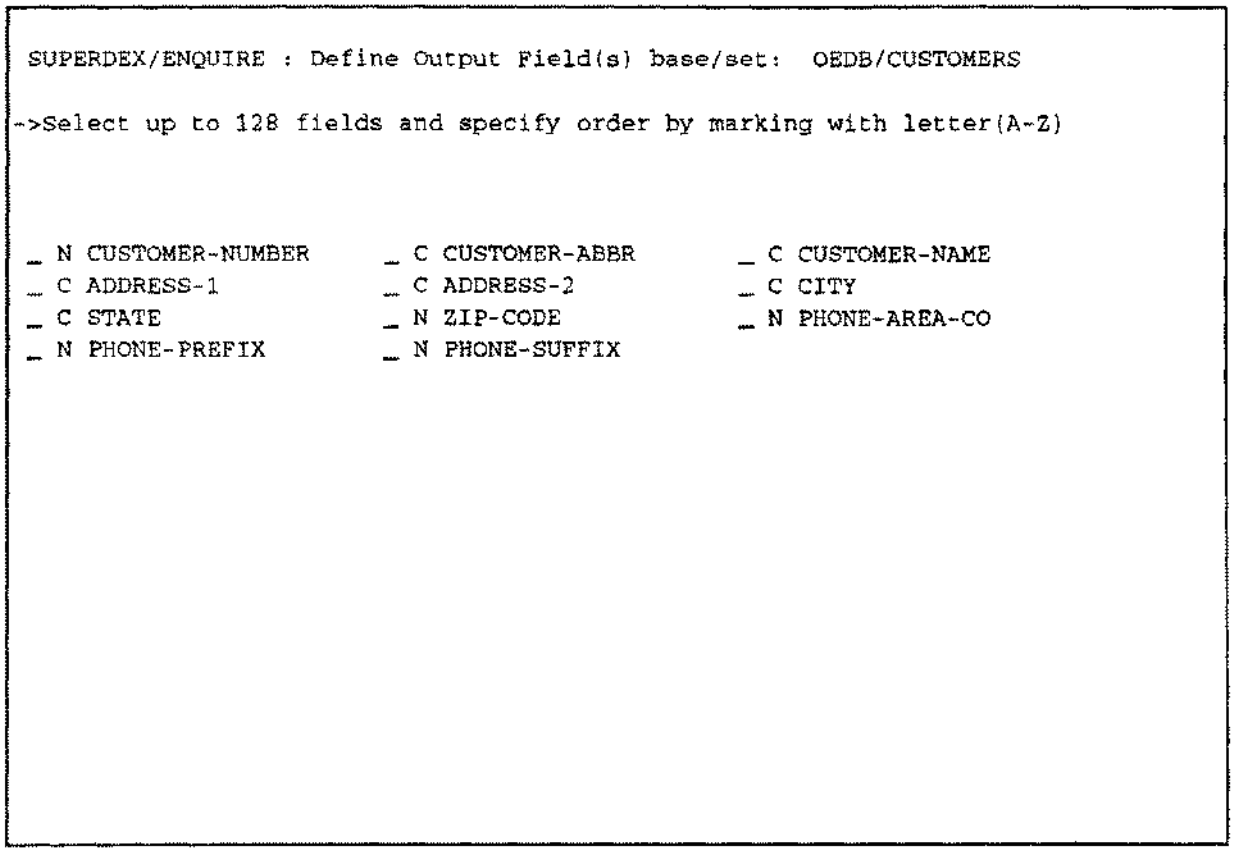
Select the SI-path to use by marking with an **X** in the box to the left of the desired SI-path.

Once the SUPERDEX SI-path has been chosen, press **ENTER** to proceed to define the selection fields for the next dataset (if it was previously selected). To instead flush the entire search profile without saving it, press the **f8** function key and you will be returned to the Main Menu; or use a different function key.

Defining fields for output

After you have completed and saved the field definition form(s) or optional SUPERDEX path form, a separate output field definition form is displayed for each dataset in the search profile. The base and set names are indicated in the upper right corner. This form (one per dataset) defines:

- the fields to output
- the order in which to output them



Fields are listed in the order in which they appear in the dataset item list. Each field is indicated by its item name and prefixed with C or N, which indicates whether the item is stored as Character (alphanumeric) or Numeric.

☞ **The fields to be outputed must be indicated, with zero or more fields per dataset, up to a maximum of 128 output fields for the search profile. For search profiles that access more than one dataset, it is required that at least one output field be specified for the last dataset defined but not for any other datasets.**

Fields are selected by entering a character in the box to the left of each. Valid characters are **A–Z** and specify the order in which the fields are to be listed (**A** is first, **B** is second, etc.). You may want to reorder the fields for reporting requirements. To list the fields in the order in which they appear in the form, just assign the same letter to each.

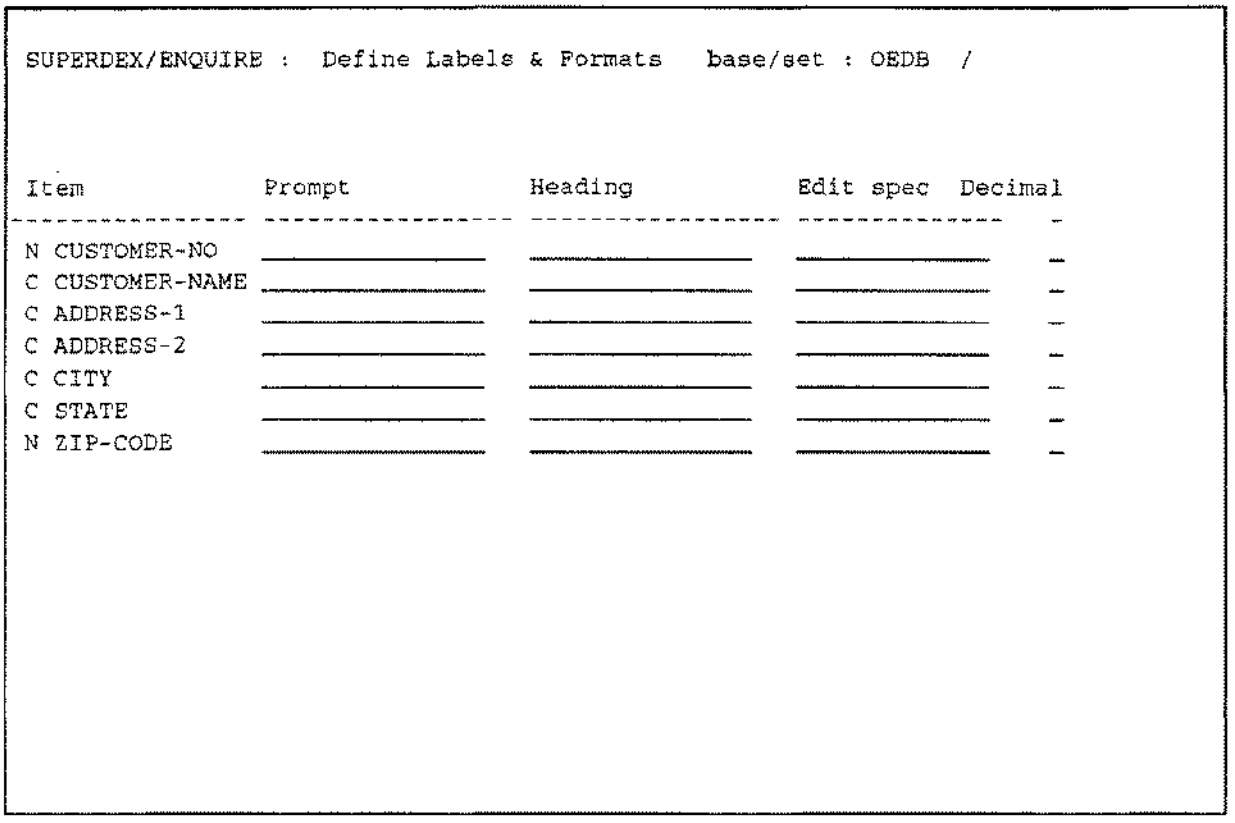
Up to 48 fields are displayed on a single page. If the set contains more than 48 fields, the other fields are displayed on one or more additional pages which are automatically shown when ENTER is press after completing the current page. You may skip between the pages with the f2 and f3 function keys.

Once all the fields in a dataset have been displayed and the required ones selected, press ENTER to proceed to the fields for the next dataset, if defined. To instead flush the entire search profile without saving it, press the f8 function key and you will be returned to the Main Menu. Other function keys have different actions.

Defining input and output field attributes

After you have completed and saved the output field definition form(s), a separate input/output field attribute definition form is displayed for each dataset in the search profile. The base and set names are indicated in the upper right corner. This form (one per dataset) defines:

- the prompt to display for each input field
- the heading to display for each output field
- edit mask specifications for alphanumeric and numeric fields
- the decimal point position for numeric fields



Each output field selected in the previous form is indicated by its item name and listed in the order specified in the previous form.

If a database profile has been defined for any database in this search profile, its attributes are displayed on this form and any or all (or none) may be overridden as desired.

Refer to the *Defining a new database profile* chapter in the *Database profiles* section for information about defining prompts, headings, edit mask specifications, and decimal point position.

Completing the search profile

Up to 16 fields are displayed on a single page; if more than 16 fields have been selected, the other fields are displayed on one or more additional pages which are automatically displayed when **ENTER** is press after completing the current page. You may skip between the pages by using the **f2** and **f3** function keys.

Once all the fields in a dataset have been displayed and the required ones selected, press **ENTER** to proceed to define the fields for the next dataset (if it was previously specified). To instead flush the entire search profile without saving it, press the **f8** function key to return to the Main Menu.

Modifying or deleting a search profile

Modifying a search profile

Existing search profiles may be modified in very much the same way and using the same forms as in defining a new search profile. Refer to the *Defining a new search profile* chapter for a discussion.

To modify an existing search profile, run ENQUIRE with the **DEF** entry point, then specify **D** in the Main Menu `Option` box and enter the name of the search profile and its password (if one was assigned), as shown:

```
SUPERDEX/ENQUIRE :  Main Definition Menu


Select an option ..... D   D = define new Search profile or
                               modify existing Search profile

                           B = define new Database profile or
                               modify existing Database profile

                           C = copy existing Search profile under
                               new name and modify

                           X = execute existing Search profile


Profile name ............. SHIPPING_____
    password ............. [           ]   (existing profile only)


New profile name ......... _____________   (Copy option only)
```

The next form for defining databases and output will already be filled in with the existing search profile configuration, as shown:

```
SUPERDEX/ENQUIRE :  Define Database(s) and Global Attributes

Database name(s) ...  OEDB__   ______   ______   ______
     password(s) ... [      ] [      ] [      ] [      ]


Custom forms ? ..... N   Y = custom user-defined forms
                         N = standard pre-defined forms

Output format ...... _   _ = screen and printer only
                         1 = BINARY : binary format for HP3000
                         2 = SD     : self-describing format for HP3000
                         3 = ASCII  : comma/quote-delimited for PC wps
                         4 = WK1    : work file for Lotus 1-2-3 on PC
                         5 = DBF    : DBF file for dBASE on PC
                         6 = MAC    : tab-delimited for Apple Macintosh

Profile password ... _____ (optional)


Delete ? ........... N     Y = delete this search profile
                           N = modify this search profile
```

For each database, enter the same password in the spaces provided as when the search profile was defined. Database passwords are not echoed to the screen for security reasons.

The `Delete` box is initialized to `N`, indicating that the default mode is modification and not deletion.

You may make any changes required to this form. To retain the current search profile password, do not modify the field; to remove the password, enter a `\` in the first position in the password field. Press **ENTER** to proceed to the next form, and after completing subsequent forms. To flush all modifications and retain the original search profile, press **f8** to be returned to the Main Menu. You may use other function keys for different results.

Each successive form is initialized with the current search profile configuration, unless

- a different database password is specified than that used when the search profile was defined
- different datasets are selected
- the order of the datasets is changed

in which case the existing search profile parameters are flushed and must be re-specified.

Deleting a search profile

An existing search profile may be deleted by specifying `D` at the Main Menu selection prompt and entering the name and password of the search profile, as shown.

The next form for defining databases and output will already be filled in with the existing search profile configuration. Enter a valid password for each database in the spaces provided. Passwords are not echoed to the screen for security reasons.

Enter `Y` in the `Delete` box to indicate that you want to delete (rather than modify) the current search profile; the search profile is deleted immediately.

Copying an existing search profile

A new search profile may be created based on an existing search profile by duplicating the search profile and modifying the copy.

To copy an existing search profile, run ENQUIRE with the **DEF** entry point, then specify **C** in the `Option` box and enter the name of the existing search profile and its password (if one was assigned) and a new name under which the search profile should be duplicated, as shown:

```
SUPERDEX/ENQUIRE :  Main Definition Menu


Select an option .......... C     D = define new Search profile or
                                       modify existing Search profile

                                  B = define new Database profile or
                                       modify existing Database profile

                                  C = copy existing Search profile under
                                       new name and modify

                                  X = execute existing Search profile


Profile name ..............  SHIPPING_____
    password ..............  [        ]       (existing profile only)


New profile name .........  SHIPPING2         (Copy option only)
```

In this example, a new search profile **SHIPPING2** has been created as a duplicate of **SHIPPING**, and may now be modified.

The next form for defining databases and output will already be filled in with the existing search profile configuration, as shown:

```
SUPERDEX/ENQUIRE :  Define Database(s) and Global Attributes

Database name(s) ...  OEDB__   ______   ______   ______
     password(s) ... [      ] [      ] [      ] [      ]


Custom forms ? ..... N   Y = custom user-defined forms
                         N = standard pre-defined forms

Output format ...... _   _ = screen and printer only
                         1 = BINARY : binary format for HP3000
                         2 = SD     : self-describing format for HP3000
                         3 = ASCII  : comma/quote-delimited for PC wps
                         4 = WK1    : work file for Lotus 1-2-3 on PC
                         5 = DBF    : DBF file for dBASE on PC
                         6 = MAC    : tab-delimited for Apple Macintosh

Profile password ... _____ (optional)


Delete ? ........... N     Y = delete this search profile
                           N = modify this search profile
```

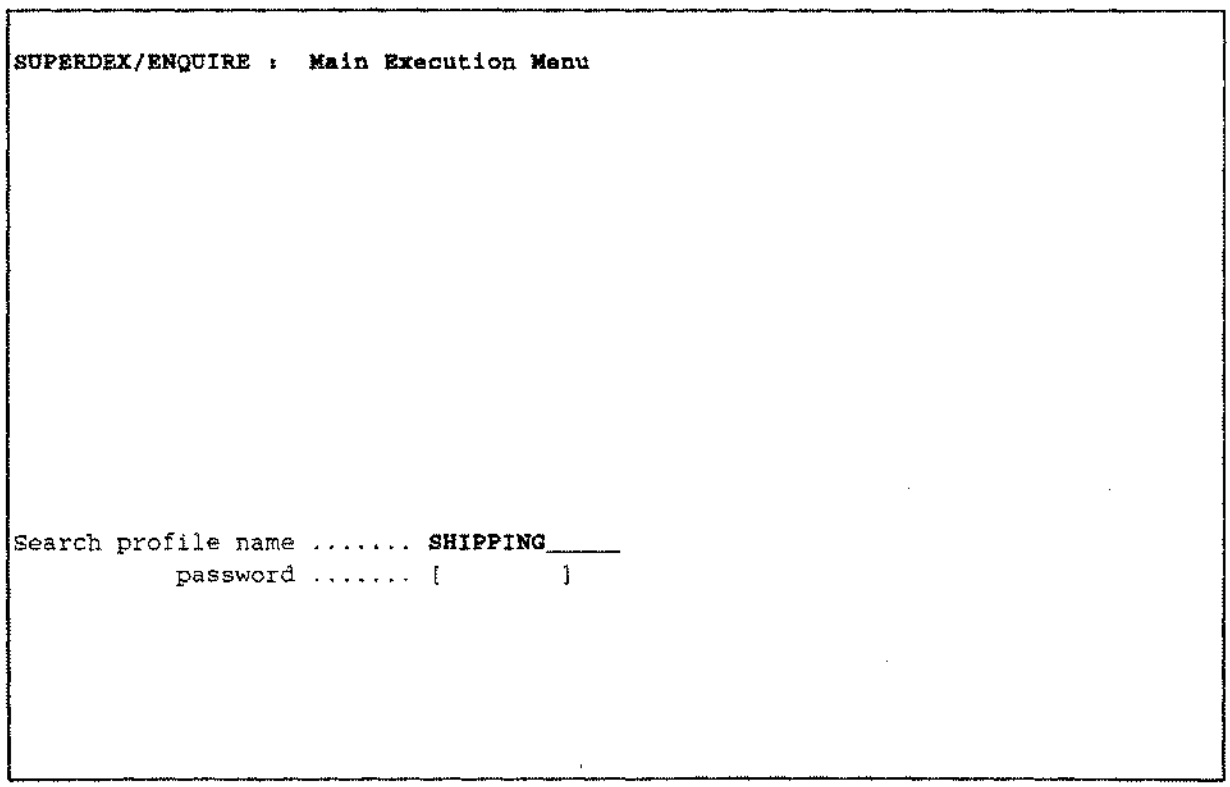
Follow the steps for modifying an existing search profile as previously described.

Executing a search profile

Main menu

To execute an existing search profile, run ENQUIRE (with no entry point). Then enter the name of an existing search profile in the appropriate box, specify the search profile password (if one was assigned), and press **ENTER**. If you do not remember the name of the search profile you want to execute, specify a search profile of **?**, which will display all the search profiles that exist for a specified database.

You may alternately run ENQUIRE with the **DEF** entry point and specify **X** in the `Option` box to execute the search profile. This method is intended for development and not recommended for use by end users.



Specifying values to search for

A prompt is issued for every field defined for selection. The label is either the *prompt* defined or, if none was specified, the item name:

```
SUPERDEX/ENQUIRE:  Input Selection Value(s)

-> Enter a selection value for each field :

Enter Shipper name    _____________________________________________
Enter Shipment status _____________________________________________









Entry limit: _______   Output file: ____________________________
                      entries qualify
```

The specified values for each field are logically ANDed together, and ENQUIRE searches for all the entries that qualify based on a combination of all the values. To ignore a selection field (thereby qualifying all values), simply leave the selection value blank.

☞ **A field can be ORed with the previous field by beginning the second field with a comma (,), which is the OR symbol in ENQUIRE.**

Selection values are case-sensitive and are only upshifted for keyworded SI-paths, since the corresponding SI-keys are automatically upshifted and stored in upper case.

Each value entered for a Character (alphanumeric) item can be:

- an exactly-matching value
- a partial value (appended by an **@**)
- a generic value (containing embedded **?**s)
- a greater-than, greater-than-or-equal-to, less-than, or less-or-equal-to construct (a value prefixed by **>**, **>=**, **<** or **<=**)
- a not-equal-to construct (a value prefixed by **<>**)
- a range of two values (separated by **:**)
- blanks, representing all values

For a Numeric item:

- an exactly-matching positive value (conditionally prefixed by a +)
- an exactly-matching negative value (prefixed by a -)
- a greater-than, greater-than-or-equal-to, less-than, or less-or-equal-to construct (a value prefixed by >, >=, < or <=)
- a not-equal-to construct (a value prefixed by <>)
- a range of two values (separated by :)
- blanks, representing all values

For items that are configured as SUPERDEX SI-keys, the following may additionally be specified:

- for grouped SI-paths, any value in any SI-key in the group
- for keyworded SI-paths, any significant word contained in the SI-key
- for all SI-paths, multiple values using Boolean operators

Alphanumeric values that contain any of the operators shown above as valid characters must be enclosed in double quotes.

Searching for all values

To search for all values for a selection field, simply leave the field blank, which effectively ignores the field.

Alternatively, an @ may be specified in the selection field to qualify all entries. Although all entries are qualified using this method, it may be more efficient if the field is used as a SUPERDEX SI-key than to leave the field blank. Also, if the field is an SI-key, entries are returned in sorted order by this field.

For an alphanumeric or numeric field, blanks may be used to represent all values, and is useful for searches in which any value for a field is acceptable. This effectively ignores the selection field altogether. For example, you may have a search profile that includes an amount field but you only sometimes want to restrict the search based on an amount--on other occasions, entries with any amount should be included. For the latter case, simply specify a blank value.

Searching for partial values

ENQUIRE can search for entries using a partial value for alphanumeric items, appended with an @. The @ is treated as a wildcard (as in :LISTF) that represents any number of any character.

For example, to find all the entries that begin with "GENERAL," specify the value

```
GENERAL@
```

The partial value specified is compared with the entries, always starting with the first character so a construct like **@ERAL** is not allowed. The @ wildcard must always come at the end of the value. Characters after the @ are ignored.

Searching for generic values

The **?** facilitates generic searches against alphanumeric items, and represents a single alphanumeric character (as in :LISTF). It may occur multiple times anywhere in the value, for example:

```
STR?NG
```

would locate "STRING," "STRONG," and "STRUNG."

The **?** matchcode may also be used in combination with the **@** wildcard, for example:

```
STR?NG@
```

would additionally find "STRINGER," "STRINGING," and "STRANGE."

The **?** matchcode may also be used to locate entries in which the desired value does not begin in the first position; for example:

```
??RT?N
```

would locate "BARTON," "BURTON," "MARTIN," and "MORTON."

☞ **Instead of specifying a ? at the beginning of an argument, it is more efficient to define an offset when possible.**

Searching for greater-than/less-than values

Greater-than and less-than searches, as well as greater-than-or-equal-to and less-than-or-equal-to searches, are accomplished for either alphanumeric or numeric items by using the **>**, **>=**, **<**, and **<=** operators to prefix the value. For example, to find all the entries greater than 1000:

```
>1000
```

To find all the entries that are greater than or equal to 1000:

```
>=1000
```

The **<** and **<=** operators work the same way for less-than and less-than-or-equal-to searches.

> and **<** operators are not available for keyword and grouped retrievals, use **>=** and **<=** instead.

Searching for not-equal-to values

Not-equal-to searches are accomplished for either alphanumeric or numeric items by using the **<>** operator to prefix the value. For example, to find all unpaid orders by testing a paid flag:

```
<>PD
```

When used in a search profile with multiple selection fields, any field value prefixed by the **<>** operator is AND NOTed with values for the other fields. For example, if the selection fields are CITY and STATE and **<>LOS ANGELES** is specified for CITY and **CA** is specified for STATE, all the entries in the state of California and not Los Angeles are selected.

Searching for a range of values

A range of values may be located in alphanumeric or numeric items by specifying the low and high endpoint values separated by a **:**. This searches for all the entries that contain values that occur between the specified values, inclusive. For example, to find all the entries that contain dates between April and June:

```
88/04/01:88/06/30
```

Ranges may alternatively be specified using the >= and <= operators in combination. For example,

```
>=88/04/01<=88/06/30
```

is equivalent to the previous example.

Searching for multiple values in a single field

Multiple values may be specified for a single selection field that is used as a SUPERDEX SI-key. This is done by including the following Boolean operators as delimiters:

- **+** for AND operation
- **,** for OR operation
- **-** for AND NOT operation

For example, to find all the customers in CAlifornia, ORegon, and WAshington:

```
CA,OR,WA
```

The search criteria are evaluated from left to right. If this does not impose the desired order of evaluation, parentheses may be used for grouping. For example, to find all the entries in a keyworded SI-key that contain both the words "COMB" and "BIND" or "HOLD" and "DRILL" but not any word beginning with "FASTEN":

```
(COMB+BIND),(HOLD+DRILL)-FASTEN
```

If the search profile utilizes more than one SI-key, parentheses may be imposed for only the selection value for the first SI-key.

☞ Embedded spaces may not be included in relational search criteria, but >=, <= and **:** may be included.

Searching for values that contain reserved characters

Several characters are reserved as operators in ENQUIRE, which may prevent entries with values that contain these characters from being located. For this reason, it is possible to instruct ENQUIRE to treat all characters in the search value as literals, simply by enclosing the search value in double quotes, as shown:

```
"GUESS? JEANS"
```

would disable the treatment of **?** as the matchcode operator.

If the field is a SUPERDEX key, the **?** must also be disabled as matchcharacter using an info string in SIMAINT, e.g. **;INFO="@ - "**

Searching for negative numeric values

Negative values in numeric items must be prefixed with a negative sign (**-**).

For numeric items of IMAGE data types P and Z, IMAGE distinguishes between numbers with no preceding sign and positive numbers. This distinction is only significant if the item is used as an IMAGE search field, which is a rare occurrence. If prompted for a value for a field that meets this condition, precede the value with a positive sign (**+**) and, if necessary, include a decimal point in the value. Though **-** and **+** are reserved operators in ENQUIRE, they do not have to be enclosed in double quotes when used as a sign of a numeric value.

Searching compound IMAGE items

Only the first subitem in a compound IMAGE item (commonly referred to as an arrayed or tabled item) is searched. If the specified value occurs in any subitem but the first, the entry may not qualify. (All subitems, however, are displayed on output.)

Specifying limit on number of entries to return

For testing or other purposes, you may impose a limit on the number of entries to be located and returned. Specify the number of entries to limit the search to in the `Entry limit` box, or leave it blank to keep it unlimited.

Specifying file for output

The `Output file` field is used only for the *store* option, which outputs data to a file in a pre-defined format. The output file is created with 32 extents and 4 allocated, thereby reserving ample space for entries from subsequent searches to be appended. If the file's *flimit*, *numextents*, *maxextents*, or other attributes are insufficient, they may be overridden with a file equation in the field.

If you need to store the data entries to a file, enter the file name, with or without a group name. If you want to append the entries to an existing output file, suffix the file name with **/A**.

If output will be printed and the printer device is other than **LP**, the device of the desired printer may be specified in the `Output file` field as either:

```
;DEV=LASER
```

to direct printed output to device class **LASER**, or

```
=*LASER
```

if a global file equation had been issued for **LASER**.

The output can be redirected to a file by specifying:

```
=filename;DEV=DISC;SAVE;NOCCTL
```

Reporting

Reporting the number of qualifying entries

Once the selection values have been specified, press **ENTER** to have ENQUIRE proceed with the search. If the search requires a serial read, a message is displayed requiring that the serial read be confirmed by pressing **f1 - f7** or cancelled by pressing **f8**.

Once the search is completed, the number of qualifying entries is displayed in the lower left area of the screen.

Often, just knowing the qualifying number of entries is sufficient and it is not necessary to view the entries, in which case the user may proceed to another inquiry by specifying new values or go back to the Main Menu by pressing **f8**.

Otherwise, ENQUIRE can output the entries found in several ways:

- display entries on the terminal screen (press **f2**)
- display only totals and common values on the screen (press **f3**)
- print to a line printer (press **f4**)
- store to a file in the pre-defined store format (press **f5**)

Reporting entries to the screen (LIST ALL)

Entries are shown one at a time on the terminal screen by pressing the **f2** function key. Only the output fields defined are shown, with their configured *headings* and in the format determined by their configured *edit masks*.

For fields that contain compound IMAGE items, each subitem value is displayed on its own line, with the subitem number appended to the heading.

Entries are displayed in either a vertical or horizontal format, depending on their overall length. Entries that can each fit on a single line are displayed in horizontal format, up to 18 entries per page; those that cannot fit on a single line are displayed one per page, up to 16 fields of an entry per page.

Entries that can fit on one line are displayed in the following format:

```
 SUPERDEX/ENQUIRE :  Display Qualifying Entries

Customer-# Order-#    Part-#          Invoice-   Unit-price
                                      line-no
-------------------------------------------------------------------
2100304    701193     A626765N          17          2695
2100304    701193     Y4403CR           16           169
2100304    701193     R9530609          15           275
2100304    701193     SRA               14            68
2100304    701193     BCMRC21BE         13          1176
2100304    701193     G27-12            12          2961
2100304    701193     C15-BLK           11           422
2100304    701193     BCMRC21BK         10          1176
2100304    701193     WES40290           9           601
2100304    701193     710-01             8           156
2100304    701193     482-2              7           123
2100304    701193     332-01-RED-M       6             9
2100304    701193     331-01-GRN-M       5             9
2100304    701193     SCM1312            3           382
2100304    701193     CLI-PC             2           102
2100304    719117     A615724            1          1960
```

Up to 18 entries are displayed on a single screen. You may page ahead to display additional entries by pressing the f2 function key.

If all of the fields cannot fit on a single line, the following vertical display format is used instead:

```
SUPERDEX/ENQUIRE :  Display Qualifying Entries

Field names and contents :


Shipper number        18
Shipper's name        BUFFALO AND ERIE CO PUB LIBRARY
Address               LAFAYETTE SQ OAK ST ENT
                      BUSINESS OFFICE
City                  BUFFALO
State                 NEW YORK
Zip code              14203
Shipment status       0
Customer Number       302503
Customer name         COUNTY OF ERIE
Address               95 FRANKLIN STREET
City                  BUFFALO
State                 NY
Zip code              14202
Balance                $8321.91
Amount                   $10.00
```

Up to 160 fields can be displayed for any entry, but only 16 lines are displayed on the screen at a time. You may skip between multiple pages with the **f5** and **f6** function keys.

Additional entries may be displayed by pressing the **f3** function key; previous entries are displayed with **f2**.

In either format, you may proceed to another inquiry by pressing the **f7** function key or go back to the Main Menu by pressing **f8**.

Reporting totals only to the screen (LIST SUMS)

Rather than displaying all the entries on multiple pages, a single page may be displayed showing only the totals of the entries found by pressing the **f3** function key. Alphanumeric values are not totalled; numeric values are totalled only if **S** was specified as first character in the edit mask.

Total fields are automatically extended by two character places to accommodate larger display values. Alphanumeric values and numeric values which are not totalled are displayed only if their values are the same for all the entries; otherwise, the field is filled with asterisks (*):

```
 SUPERDEX/ENQUIRE :  Display Qualifying Entries

Customer-# Order-#    Part-#          Invoice-    Unit-price
                                      line-no
-------------------------------------------------------------------------
2100304    701193     **********      ******         10529+
2100304    719117     A6175724             1          1960+
2100304    728090     A626765N             1          2695+
2100304    815402     **********      ******         15477+
2100304    831252     **********      ******           118+
2100304    909375     **********      ******         17563+
2100304    916401     568-01               1           159+
2100304    928311     **********      ******         16008+
2100304    928312     **********      ******         11484+
```

If the search involved multiple datasets, only the numeric values of the last dataset accessed are summed and displayed.

Printing entries on printer (PRINT)

The entries are printed on the printer by pressing the f4 function key. Output is by default sent to the system line printer (device class LP), but may be redirected to another printer by a file equation for **ENQLIST** or specifying the printer device in the `Output file` field, as described previously.

Entries are printed one per line, with a two-line heading. If the printer line width is not sufficient to display the entire entry, the entry is split and displayed on two lines. In this case, a four-line heading is printed.

If two lines are not sufficient to display the entire entry, entries are printed piecewise: They are printed one per line and truncated at the end of the printer line. Then the continuation of all entries is printed, starting from the item where the split was made; and this is repeated until the entries are completely printed. In every continuation line, the first item of the entry - usually a key - is repeated, thus corresponding lines can be identified by the first field.

Printer line width (default: 132) and number of lines per page (default: 66) can be configured via JCWs:

```
:SETJCW ENQLPWIDTH=nn
```

defines printer line width, the maximum allowed is 132

```
:SETJCW ENQLPLINES=nn
```

defines lines per page.

The JCWs can be set before calling ENQUIRE, or in BREAK.

Storing entries to a file (STORE)

The entries are written to the file specified in the `Output file` box by pressing the f5 function key.

The output file may be created on the HP3000 or, if you are using Reflection, automatically downloaded to your microcomputer. This decision is made by ENQUIRE based on the specified file name. The output file will be created on the microcomputer rather than the HP3000 if the file name meets one of the following criteria:

- first character is a backslash (\)
- first character is a period (.)
- second character is a colon (:)

Refer to the *Reflection interface* chapter of the *Batch and micro interfaces* section for more information.

If the specified file is built on the HP3000 and it already exists, and the append option (file name suffixed with **/A**) was not specified, a message is displayed and a different file name may be entered, or the existing file may be overwritten by pressing f5 again.

The format in which the entries are stored is pre-defined in the search profile as either ASCII (comma/quote delimited, BINARY (HP3000), DBF (dBase), SD (self-describing), WK1 (Lotus), or MAC (Macintosh).

Section 5 Batch and micro interfaces

This section describes ENQUIRE's batch and microcomputer interfaces.

Section 1 **Batch Interface**
Description describes the *Batch interface*, which is useful for incorporating advanced retrieval capabilities to application programs by allowing ENQUIRE to be called directly.

Section 2 **Micro Interface**
Description describes the *Micro interface*, which permits files to be output in various formats for use on microcomputers. It discusses manually and automatically downloading files to microcomputers and gives an example of a Reflection command file.

Section 3 **Lotus Interface**
Description describes and gives an example of ENQUIRE's *Lotus Interface*, which permits an ENQUIRE search profile to be executed and the results utilized from within Lotus 1-2-3 without exiting.

Section 4 **Controlled Interface**
Description describes the *Controlled interface*, which is useful for incorporating ENQUIRE into master programs like TaskMaster.

Batch interface

ENQUIRE can execute search profiles in batch by providing responses directly in the job stream or by utilizing separate input files.

This same batch facility is also useful for executing search profiles from within programs and other systems, such as Reflection command files.

Creating an input file

For batch and program operation, an input file may first be created with the search profile execution parameters. The input file may be built using any editor, with one parameter per line, in the following format:

line	*description*
1	search profile name (maximum 14 characters), followed by **/** and the search profile password (maximum 8 characters)
2 - *n*	selection values (one per line)
n+1	search limit (or blank if no limit imposed)
n+2	output file name (file name + optional group name + optional **/A**)

The following shows a sample input file called OVER90SP being created in EDIT/3000:

```
:EDITOR
HP32201A.07.17 EDIT/3000
(C) HEWLETT-PACKARD CO. 1985
/A
    1      PASTDUEOVER90/password
    2      CA
    3      >90
    4      1000:10000
    5
    6      OVER90.DATA/A
/K OVER90SP
/EXIT

END OF SUBSYSTEM
```

This search profile execution locates customers in California who are more than 90 days past due and owe between 1,000 and 10,000 dollars. The search profile is called PASTDUEOVER90, three search criteria are specified (note how the range is broken over two lines), no search limit is imposed, and the entries found are appended to the existing output file OVER90.DATA.

Executing a search profile in batch mode

ENQUIRE may be run in batch by including parameters, one per line, in the same format as the input file, as shown:

```
!JOB OVER90,MGR.AP
!RUN ENQUIRE.PUB.SUPERDEX
PASTDUEOVER90/password
CA
>90
1000: 10000

OVER90.DATA/A
!EOJ
```

Alternatively, the search parameters may be specified in an input file and run from a job stream simply by adding a single command that runs ENQUIRE with the **BATCH** entry point, redirects its $STDIN file to the input file, and redirects its $STDLIST to $NULL, as shown:

```
:RUN ENQUIRE.PUB.SUPERDEX,BATCH;STDIN=inputfile;STDLIST=$NULL
```

This causes ENQUIRE to execute the search profile and parameters defined in the inputfile and to suppress all its output with the exception of the output data file created.

Executing a search profile from another program

This same technique may be used to execute search profiles from within your own programs. Create the input file and run ENQUIRE as a son process of your program (using the CREATEPROCESS intrinsic) with the BATCH entry point and its $STDIN and $STDLIST redirected, as shown above.

Micro interface

☞ **The microcomputer interface is available as an add-on option to the standard SUPERDEX/ENQUIRE package.**

Automatically downloading store files to microcomputer

The output file is automatically built on the microcomputer if you are using Reflection and the file name specified in the `Output file` field meets one of the following criteria:

- first character is a backslash (\)
- first character is a period (.)
- second character is a colon (:)

Make sure to include the correct extension (.PRN, .WK1, or .DBF) on the file name.

Manually downloading store files to microcomputer

Files that have been created by ENQUIRE's store option may be manually transferred to a PC, Macintosh™, or other microcomputer by various programs, such as Reflection™, AdvanceLink™, or Business Session™. Since these products are normally also used to emulate block mode, their file transfer facilities should be readily available.

In transferring files, make sure the transfer is done in **binary** format. If the micro file extension is not specified, the correct extension for the specified output file format is automatically appended.

Executing a search profile from a Reflection command file

The batch facility is also useful for executing a search profile from within a Reflection command file invoked from a PC.

The following Reflection command file contains embedded execution parameters, rather than having them contained in a separate input file. This example extracts entries from an IMAGE database, writes them to a file in dBASE format, and uploads the file to a microcomputer:

```
BACKGROUND
IF V2 = ""
   LET V3 = "MAILLIST.DBF"
ELSE
   LET V3 = V2 & ".DBF"
ENDIF
PTRANSMIT "RUN ENQUIRE.PUB.SUPERDEX,BATCH;STDLIST=$NULL"
PTRANSMIT "CUSTDB"
PTRANSMIT V1
PTRANSMIT ""
TRANSMIT "ENQTEMP^M"
WAIT FOR "^Q"
RECEIVE V3 FROM ENQTEMP BINARY DELETE
PTRANSMIT "PURGE ENQTEMP"
```

In this example, the CUSTDB database is searched for a specified value (V1), and the qualifying entries are written to the file ENQTEMP. This file is then transferred to the microcomputer under the name MAILLIST.DBF or a specified file name (V2.DBF), deleting any local file with the same name, and the ENQTEMP file on the HP3000 is purged.

Lotus interface

Using ENQUIRE's batch facility in conjunction with a file transfer utility, it is possible to invoke an ENQUIRE search profile from within Lotus 1-2-3 using values specified in a worksheet and then access the resulting entries from within Lotus, without the need to exit.

The following Reflection command file is executed in background on the PC and waits for the file **SDX.PRN** which contains the ENQUIRE batch commands and selection values to be created (be downloaded):

```
BACKGROUND
:START
IF EXIST("SDX.PRN")
  SEND SDX.PRN TO ENQIN ASCII DELETE
  ERASE SDX.PRN
  TRANSMIT "FILE DBENQ=DBENQ.DEMO.SUPERDEX"
  TRANSMIT "RUN ENQUIRE.PUB.SUPERDEX,BATCH;STDIN=ENQIN^M"
  WAIT FOR "^Q"
  RECEIVE ENQ.WK1 FROM ENQTEMP BINARY DELETE
  PTRANSMIT "PURGE ENQIN"
  PTRANSMIT "PURGE ENQTEMP"
ENDIF
WAIT 0:0:5
GOTO START
```

The Lotus worksheet should contain a macro which generates the file **SDX.PRN**

```
\E                  {WINDOWSOFF}
                    {OPEN SDX.PRN,W}
                    {WRITELN "CONCATENATED"}
                    {WRITELN @STRING(A2,0)}
                    {WRITENL B2}
                    {WRITELN ""}
                    {WRITELN "ENQTEMP"}
                    {CLOSE}
```

This macro generates the ENQUIRE batch commands using the contents of cells A2 and B2. This macro has to be adapted to the worksheet and to the search profile.

When this macro is executed, the file **SDX.PRN** is generated. The background command file transfers this file to the HP3000, executes ENQUIRE and transfers the result WK1 file back to the PC. All this occurs in background, while the user can continue to work on his worksheet. The new WK1 file can be accessed by the /FILE RETRIEVE or /FILE COMBINE commands.

When using the /FILE RETRIEVE command, the new worksheet has correct columns width and cell formats (including decimal point) as well as column heading. The column heading can be suppressed by /FILE COMBINE command using the range **DATA**.

Controlled Interface

ENQUIRE can execute a search profile in line mode instead of using VPLUS screens. This is done by using the **CONTROLLED** entry point.

```
:RUN ENQUIRE.PUB.SUPERDEX,CONTROLLED
```

In this mode ENQUIRE will prompt for the search profile, optionally for the password, for all selection values, for the limit, and for the output file name. If an error is detected, the corresponding message is displayed and a reprompt occurs. After the search profile is executed, ENQUIRE prompts for the next action, i.e. next selection, next profile, or exit. At any time, **//** can be entered as response, which acts like ↵ in VPLUS mode.

```
ENQUIRE VERSION 3.1 COPYRIGHT DR. MATT/IABG (1988,1989)

DEMO VALID UNTIL SAT, AUG 11, 1990

Enter search profile >
SIMPLE
Enter customer name >
U@
Enter limit >

Enter output file >
SIMPLOUT
15 entries retrieved
next action: S(election) / P(rofile) / E(xit) >
E
```

Though it is possible to run ENQUIRE with the CONTROLLED entry point directly as a session, it is intended to be run either from a REFLECTION command file, a PC program using REFLECTION's Application Interface or as son process under control of a master process. Such a master process can be Office Extend TaskMaster.

TaskMaster's job is to bring the HP3000 data directly into PC applications. To retrieve the data from within Lotus, the user simply brings up the 1-2-3 command line and performs a /FileRetrieve specifying an Office Extend HostDisk "mapped-task" file entry on the HP 3000 (X:REPORT32.WK1, for example).

This action causes Office Extend to begin TaskMaster operation with a specified task script, in this case one designed to control ENQUIRE. TaskMaster gets any input required from the PC operator and displays messages on the PC screen. ENQUIRE extracts the requested data and TaskMaster returns the resulting file directly to Lotus.

Section 6 Customizing ENQUIRE

This section describes the facilities for customizing ENQUIRE to suit your environment.

Chapter 1 **Custom forms**
Description discusses the criteria for setting up *Custom forms* for input and output rather than using ENQUIRE's default VPLUS forms.

Chapter 2 **Native language support**
Description reviews ENQUIRE's handling of *Native language support* and includes instructions for configuring the native language and modifying ENQUIRE's message catalog.

Chapter 3 **Floating Point Decimals**
Description shows how to display Business Basic's *Floating Point Decimals.*

Custom forms

Custom forms

By default, ENQUIRE generates standard VPLUS forms for data input and output.

Alternatively, you may define custom forms (in FORMSPEC) and store them in the same forms file as the default standard forms. The standard forms file is FOENQ*nnn*.PUB.SUPERDEX, where *nnn* is the *langid* (000 is Native-3000).

If defining custom forms for a search profile, both custom input and output forms must be defined. For either or both input and output forms, a custom help form may be defined.

Custom input forms

The input form name must be comprised of the letter **S** followed by the search profile name. For example, the input form for the SHIP search profile would be named *SSHIP*.

The names of each input field (in which selection values are entered) must be the same as the first 15 characters of the corresponding item name (the last character is truncated). For item names that include special characters, replace each special character with an underline (_) when specifying the field names, since VPLUS disallows all other special characters. The sequence of the fields, as well as their positions on the form, is arbitrary.

Additionally, three fields may be included in the form, described below with their FORMSPEC attributes:

name	*description*	*ftype*	*dtype*
LIMIT	search field limit (optional input field)	O	DIG
ENQFILE	output file name for store option (input field, required only if an output format has been specified)	O	CHAR
ENTRIES	number of qualifying entries found (required output field)	D	DIG

The function keys operate in the same manner as in the default input form, specifically:

f1	HELP
f2	LIST ALL
f3	LIST SUMS
f4	PRINT
f5	STORE
f8	MENU

Custom output forms

The output form name must be comprised of the letter **R** followed by the search profile name. For example, the output form for the SHIP search profile would be named *RSHIP*.

The names of each output field (in which data entry values are displayed) must be the same as the first 15 characters of the corresponding item name (the last character is truncated). For item names that include special characters, replace each special character with an underline (_) when specifying the field names, since VPLUS disallows all other special characters. The sequence of the fields, as well as their positions on the form, is arbitrary. All the desired fields in a dataset must be displayed on one form.

ENQUIRE can display up to 16 separate entries on a single page. To configure such a form, specify the corresponding item names on the first line of the form and unique, arbitrary names on subsequent lines. It is recommended that the first 14 characters of the item name suffixed by the numbers from 1 through 16 be used.

For fields that consist of compound IMAGE items, one display field should be provided for each subitem. The name of the first field must be the same as that of the item (which cannot exceed 15 characters), with each additional field having an arbitrary name but immediately following the first subitem field and each other. It is recommended to use the same item name suffixed by the subitem number; for example, the fields for the 412 field called QUARTER-TOTAL would be QUARTER-TOTAL, QUARTER-TOTAL2, QUARTER-TOTAL3, and QUARTER-TOTAL4.

The function keys operate in the same manner as in the default output form, specifically:

f1	HELP
f2	PREVIOUS ENTRIES
f3	NEXT ENTRIES
f7	SELECT/OUTPUT
f8	MENU

Custom help forms

A custom help form may be defined for either or both the custom input and output form, which will be accessible via the f1 function key from each form. The content of the help form is completely freeform.

The help form name must be comprised of the **S** (for input) or **R** (for output) prefix character, followed by the search profile name, followed by a variable number of underlines (_) and the letter **H**, such that the total length of the form name is 15 characters. For example, the custom help form for the input form of the SHIP search profile would be named *SSHIP_____H* (9 underline characters).

Native language support

Setting the native language

ENQUIRE can either be installed in a particular native language, or the language can be defined when the program is run.

To install ENQUIRE in a native language, patch the program with the octal value of the desired language ID number (*langid*) preceded by a zero, as shown:

```
:RUN PATCH.PUB.SYS

  FILE=?ENQUIRE.PUB.SUPERDEX
?MG,11
  000000,010
?EXIT
```

In this example, the native language is changed from Native-3000 (000) to German (octal 010, decimal 008).

To define the native language at run time instead, or to override the installed native language, indicate the one or two rightmost significant digit(s) of the *decimal langid* (*nn*) as a parameter on the :RUN command, as shown:

```
:RUN ENQUIRE.PUB.SUPERDEX;PARM=nn
```

The languages supported on the HP3000 with their language ID numbers in decimal and octal are as follows:

Language	*Decimal langid*	*Octal langid*
Native-3000	000	000
American	001	001
Canadian-French	002	002
Danish	003	003
Dutch	004	004
English	005	005
Finnish	006	006
French	007	007
German	008	010
Italian	009	011
Norwegian	010	012
Portuguese	011	013
Spanish	012	014
Swedish	013	015
Katakana	041	051

Forms file (with Native Language Support)

The forms files that contain standard and custom input and output VPLUS forms in various languages are FOENQ*nnn*.PUB.SUPERDEX, where *nnn* is the language ID number (*langid*). Forms files are provided for several languages, and additional forms files may be created for languages not provided.

The forms files are provided in source (VFORM) format. It is recommended that they be compiled into fast (VFAST) format using FORMSPEC to increase execution speed.

Error and status message catalog (with Native Language Support)

Compiled message catalogs that contain error and status messages are ERENQ*nnn*.PUB.SUPERDEX, where *nnn* is the language ID number (Native-3000 is 000).

Sources are provided for each language in the files CAT*nnn*.PUB.SUPERDEX, and may be modified in any editor and recompiled using GENCAT. Refer to HP's **Native Language Support Reference Manual** for further information.

A table of ENQUIRE's error and status messages, along with their meanings and recommended actions, is shown in the *Error and exceptional conditions* appendix.

HPFD support

Business Basic under MPE V supports special data types "Floating point decimals".

These types are stored in IMAGE as K2 and K4 types.

To instruct ENQUIRE to display K2 or K4 as floating point decimals enter the command

SETJCW SIHPFD=1

before starting ENQUIRE.

Appendix A Database structural changes

Certain changes to the structure of databases used in database and search profiles result in the profiles being unusable. This is because sets and items are internally identified by number in the **DBENQ** database, and any database structural modification that causes set or item numbers to change invalidates the corresponding profiles.

Set names and numbers are tracked within the DBENQ database and allow ENQUIRE to detect that a structural change involving datasets or items has occurred. In this case, an appropriate message that the profile is invalid is issued.

ENQUIRE is capable of updating set and item numbers within the DBENQ database when new sets and items are added and existing sets and items are deleted, as well as updating set and item names when sets and items are renamed.

Two options exist as entry points to ENQUIRE which update database and search profiles following database structural changes:

- **STRUCT** option, for a structural change that does not involve renames of either sets or items
- **RENAME** option, for a structural change that involves only set or item renames

Following a database structural change, ENQUIRE must be run with the appropriate option and the affected database identified. To do so, log on as the creator of the affected database and run ENQUIRE as follows:

```
:RUN ENQUIRE.PUB.SUPERDEX,STRUCT;INFO="base"
```

or

```
:RUN ENQUIRE.PUB.SUPERDEX,RENAME;INFO="base"
```

Both options cause ENQUIRE to search the DBENQ database for any database profile and all search profiles that access the specified database and automatically update them to reflect the new database structure.

If multiple DBENQ bases are used, ENQUIRE must be run separately against each DBENQ base that contains a database profile or search profiles relating to the affected base. This may be done by issuing the necessary file equation for each DBENQ base.

Appendix B Internal structures

The DBENQ database

Search profiles are maintained in the **DBENQ** database, which by default resides in PUB.SUPERDEX and which may be moved to or duplicated in another group/account.

It is necessary to assure that the capacities of the datasets are sufficient to contain all the entries required by the search profiles. (DBGENERAL customers should configure the DBENQ database in the Automatic Capacity Manager using option 3.1 and use option 3.2 to maintain the capacities.)

The datasets and their contents are as follows:

ENQ Master dataset; contains one entry per database profile and one entry per search profile.

ENQR Detail set; contains one entry per secondary dataset (primary dataset information is stored in the ENQ set).

ENQF Detail set; contains one entry for the attributes of each field, including fields defined in database profiles.

SETINFO Master set; contains one entry per accessible dataset in each database used in any search profile (including those datasets that are not used in any search profile).

ITEMINFO Detail set; contains one entry per accessible item in each database used in any search profile (including those datasets that are not used in any search profile).

Determining ENQUIRE access method

ENQUIRE establishes the optimum method for accessing data entries based on existing IMAGE paths and SI-paths. The access method is determined when the search profile is defined, and is done in the following sequence:

1. If both an IMAGE path and SUPERDEX SI-key (type "I" and "S" keys) have been specified for a single field, ENQUIRE will use the IMAGE search field unless the value is blank, in which case the SUPERDEX SI-path will be used.

2. If a value other than a full key value is specified for an IMAGE key, a sequential read is performed, as IMAGE does not support partial-key retrieval.

3. If a single SUPERDEX SI-key is used as a selection value, ENQUIRE performs indexed access.

4. If multiple SUPERDEX SI-keys are included as search fields and neither is blank, ENQUIRE performs relational access. If one value or the other is blank, indexed access is used.

5. If the search value includes Boolean operators, ENQUIRE performs a relational access.

6. If no IMAGE search field or SUPERDEX SI-key is included as a search field, ENQUIRE performs a sequential read.

7. If no value is specified for a selection field, the field is effectively ignored.

At execution time, for searches that involve multiple datasets, ENQUIRE reads the qualifying entries in the primary dataset and records the value(s) of the field(s) used to logically link to secondary sets. These values are then used to locate matching entries in any secondary sets. If no secondary entries exist, the primary entry is disqualified, since an AND condition must be satisfied.

Appendix C Maximum limits

The following table identifies ENQUIRE's internal limits. Most limits are not checked, and results when exceeded are unpredictable.

ENQUIRE maximum limits

Facility	*Maximum limit*
Databases per search profile	4
Datasets per search profile	16
Selection fields per search profile (excluding IMAGE search field)	16
Output fields per search profile	128
Number of IMAGE search fields per dataset per search profile	1
Number of SUPERDEX SI-keys	2
Number of SUPERDEX SI-keys in which selection field is second SI-subkey	1

Appendix D Error and exceptional conditions

ENQUIRE error, exceptional, and status messages

The **ENQUIRE error, exceptional, and status messages** table lists the various ENQUIRE error conditions, exceptional conditions, and status messages that could be issued by the ENQUIRE program, their meanings, and their corrective actions.

Message catalogs are supplied in various native languages, and may be modified as desired. Refer to the *Customizing ENQUIRE* section for more information.

ENQUIRE error, exceptional, and status messages

Type	***Message number / description***
Message	**1 No message defined**
Meaning	No message is defined for this error
Action	Call Bradmark Technical Support if assistance is required
Message	**2 Database cannot be opened** *(followed by reason)*
Meaning	ENQUIRE is unable to open the specified database due to the error displayed, typically because an invalid password was specified or no file equation was set for a database residing outside of the logon group/account
Action	Correct the cause of the error and retry
Message	**3 No previous page**
Meaning	You are currently accessing the first (or only) page of this form
Action	Note the condition and continue
Message	**4 No next page**
Meaning	You are currently accessing the last (or only) page of this form
Action	Note the condition and continue
Message	**5 Too many fields selected**
Meaning	More than 16 input fields or 128 output fields were selected
Action	De-select (with a SPACE) one or more fields until the maximum limit is no longer exceeded
Message	**6 No fields selected, at least one must be**
Meaning	At least one field must be selected for each dataset
Action	Select one or more fields

ENQUIRE error, exceptional, and status messages (cont'd)

Type	***Message number/description***
Message	**7 Search profile does not exist**
Meaning	You are attempting to execute a nonexistent search profile
Action	Retry with a valid search profile (or specify **?** to display all configured database and search profiles)
Message	**8 Inconsistency; please redefine profile**
Meaning	An inconsistency has been detected between the search profile and one or more of the databases it accesses
Action	Refer to the *Database structural changes* appendix for a discussion
Message	**9 Custom form does not exist**
Meaning	A custom input or output form was specified, but does not exist in the FOENQ*nnn* forms file
Action	Pre-define the required forms
Message	**10 Invalid input for numeric field**
Meaning	A value other than a number or valid operator was entered as the search value for a numeric field (item data type I, J, K, P, R, or Z)
Action	You may enter only a number and optionally the operators **>**, **>=**, **<**, **<=**, or **:** in this field
Message	**11 Required field(s) not defined in custom form**
Meaning	The fields ENQFILE, ENTRIES, and LIMIT are required for this search profile and have not been specified in the output form
Action	Include the required fields in the form--refer to the *Customizing ENQUIRE* section
Message	**12 Serial read in progress - please wait**
Meaning	No SI-path or IMAGE path could be used to access the dataset, so a sequential search is being performed
Action	Status message only
Message	**13 Invalid output format specified**
Meaning	You have specified an invalid output format; valid output formats are **1** - **6**
Action	Specify a valid output format, or leave blank
Message	**14 Output file name not specified**
Meaning	You press the **f4** key to store the found entries but did not specify a file name
Action	Enter a file name in the `Output filename` field and press **f4** again
Message	**15 Output file already exists; press f5 again to purge**
Meaning	The specified file to store entries already exists
Action	Either enter the name of a nonexistent file, suffix the file name with **/A** to append to the existing file, or press **f5** again to purge the existing file
Message	**16 Output file being created**
Meaning	Store file in the process of being created
Action	Status message only

ENQUIRE error, exceptional, and status messages (cont'd)

Type	***Message number/description***
Message	**17 No direct or indirect relationship exists**
Meaning	You have selected a secondary dataset which has no direct or indirect relationship with the primary set or another secondary set
Action	Datasets must be ordered such that rules of dependence are satisfied
Message	**18 Output file to append to does not exist**
Meaning	You have specified an output file with **/A** that does not exist and which therefore cannot be appended to
Action	Specify a file that exists, or leave off the **/A** to create a new output file
Message	**19 Serial read required; press f1-f7 to proceed or f8 to cancel**
Meaning	A serial read is necessary to perform the search
Action	Press any function key in the range f1 - f7 to proceed with the serial read, or f8 to abort it
Message	**20 Database profile cannot be executed**
Meaning	You are attempting to execute a database profile
Action	This operation is not allowed
Message	**21 No previous entry**
Meaning	You are currently accessing the first (or only) entry found
Action	Note the condition and continue
Message	**22 No next entry**
Meaning	You are currently accessing the last (or only) entry found
Action	Note the condition and continue
Message	**23 Invalid password**
Meaning	You are currently accessing the last (or only) entry found
Action	Note the condition and continue
Message	**24 Input does not conform to required syntax**
Meaning	Syntax is illegal
Action	Use correct syntax
Message	**25 Definition incomplete**
Meaning	SAVE CURRENT function was invoked before minimum required search profile definition was completed
Action	Complete search profile by modifying it
Message	**26 Search profile already exists**
Meaning	Attempting to copy a search profile under a name that is already in use for a search profile
Action	Choose an unused name for the search profile copy

ENQUIRE error, exceptional, and status messages (cont'd)

Type	***Message number/description***
Message	**27 Invalid base profile**
Meaning	Option **B** selected and `Profile name` exceeds six characters
Action	Specify database name as `Profile name`
Message	**28 File equation failed**
Meaning	:FILE equation was issued for output file, returned FSERROR
Action	Correct :FILE equation to prevent FSERROR
Message	**29 Multiple values not permitted for this field**
Meaning	Multiple criteria are only allowed for field used as a SUPERDEX SI-key
Action	You may specify only a single value for this field
Message	**30 Only one "I"key and two "S" keys or one "s" key may be selected**
Meaning	Maximum supported keys have been exceeded
Action	Restrict number of keys to limit documented in *Appendix C*
Message	**31 Invalid character used to mark field**
Meaning	"I" was used to mark access method for IMAGE search field or "S" to mark access method for field which is not a SUPERDEX SI-key
Action	Access method must conform to key type
Message	**32 HELP not available for this screen**
Meaning	Online help does not exist for custom forms
Action	Remove the label for the f1 function key
Message	**33 Micro Interface not available**
Meaning	The Micro Interface option was not purchased
Action	Contact your Bradmark sales representative for information
Message	**34 Database names must be specified contiguously**
Meaning	For a search profile that utilizes multiple databases, base names were not specified in contiguous boxes on the definition form
Action	Configured bases must be in adjacent boxes

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