R S I

ORACLE

TERMINAL INTERFACE

USER FRIENDLY INTERFACE (UFI)

Oracle Users Guide - Version 2.3

U F I

USER FRIENDLY INTERFACE

TABLE OF CONTENTS

UFI

USER FRIENDLY INTERFACE

I. INTRODUCTION

The User Friendly Interface (UFI) provides the capability for ORACLE users to utilize SQL to access and manipulate a database directly via display terminals.

UFI can be utilized by programmers to try out various SQL commands and table designs interactively. This capability is particularly useful in testing during program development. The reporting facilities can often meet one-time programming requirements without having to write a program.

UFI can be utilized by data administrators in evaluating and implementing design decisions concerning what tables should be created in the database. UFI also provides a way to quickly and easily implement decisions about controlling user access to stored data.

UFI enables users to:

- enter SQL statements and observe the results on the display screen.
- control the format of the display with UFI commands.
- edit the current SQL statement with UFI commands.
- route an output report to a system file and optionally schedule it to be printed.
- create and run stored routines (command files) containing SQL statements and UFI commands.
- specify the SQL Work Area.
- cancel the SQL statement in progress.

UFI is the primary facility provided with ORACLE for interactive processing of SQL statements from a user terminal.

II. OPERATION

The two modes of operation for UFI are processing SQL statements and processing UFI commands. The mode is indicated by the prompt (**SQL>** for SQL statements and **UFI>** for UFI commands). The mode can be changed by simply entering a "CR" (return) following the prompt. This is used to switch from SQL mode to UFI mode or vice versa. UFI commands are used to edit SQL statements, control UFI files, control display formats, and specify UFI control commands.

A convention exists whereby a user can issue UFI commands while in SQL mode. If the UFI command is preceded by a pound sign "#", the command will be interpreted as a UFI command.

A user initiates a UFI session and logs into ORACLE by entering "SQL" and responding to the prompt for database name.

```
> SQL
RSI
Welcomes you to ORACLE
Release 2.3
Enter database-name [user-name/password]: demo
SQL>
```

If the database is secure (created with a user-name), then the optional user-name/password parameter must be specified. In this case the user-name must have been specified with a DEFINE USER statement and all access will be controlled by the GRANT privileges.

When the "SQL" commands is typed the database name, and if appropriate the user-name and password may optionally be included on the same command line.

```
> SQL pers scott/tig
RSI
Welcomes you to ORACLE
Release 2.3
Enter database-name [user-name/password]: pers scott/tig
SQL>
```

When signing on to a secure database, it might be desirable to do so without having the password displayed (or echoed) on the screen. This can be accomplished by specifying only the user-name (and no slash), in which case the user receives a prompt for the password. When responding to this prompt, the password being entered is not displayed on the screen.

```
> SQL pers scott
RSI
Welcomes you to ORACLE
Release 2.3
Enter database-name [user-name/password]: pers scott
Enter password:
SQL>
```

Following log on, UFI is in SQL mode and the user can directly enter SQL statements, or he can switch modes and enter UFI commands. If a user wishes to switch to another database, a UFI command allows him to do so without terminating the UFI session. When the session is finished, the user must switch to the UFI mode and log off with the EXIT command.

III. SQL STATEMENTS

SQL statements are entered in free form utilizing as many lines as desired (to a maximum of 60 lines or a maximum of 2048 characters). Multiple SQL clauses may be combined on a single line, or an individual clause may be spread over several lines. Indentation is optional and is generally used to clarify the meaning. UFI will process SQL statements containing up to a total of 50 columns in the SELECT clauses. The punctuation and coding rules for SQL statements are described in the ORACLE SQL Language Reference Manual.

A SQL statement is made up of one or more lines, followed by a line containing only a slash (/). Note that a SQL Comment (initiated by a "/*" in any position) will not be interpreted as a statement termination. The line containing only a slash causes UFI to combine all lines preceding it into a single SQL statement and send it to ORACLE. If another line containing only a slash is entered immediately following the execution of the SQL statement, that statement will be executed again.

A SQL statement in process may be canceled by depressing the Control Key and entering "C" (i.e., ^C). Under the IAS operating system, it is necessary to abort the task following the ^C. Under the UNIX operating system, the SQL statement may be canceled with the "Delete" key.

The following sequence of lines would be interpreted as a single SQL statement.

```
SQL>/*
SQL>   Find the name and department of employees
SQL>   who have the same job as Jones or a salary
SQL>   greater than Ford's salary.
SQL>*/
SQL>SELECT          ENAME, DEPTNO
SQL>FROM            EMP
SQL>WHERE           JOB IN
SQL>      SELECT    JOB
SQL>      FROM      EMP
SQL>      WHERE     ENAME = 'JONES'
SQL>OR SAL >
SQL>      SELECT    SAL
SQL>      FROM      EMP
SQL>      WHERE     ENAME = 'FORD'
SQL>/
```

IV. UFI COMMANDS

UFI commands are used to edit SQL statements, specify display formats, route UFI output, specify the database, and specify the SQL work area. The format of all UFI commands is:

```
[#]command [argument-string]
```

The space between the command and the argument string is optional. The optional # sign appended to the beginning of the command is used to enter UFI commands when in SQL mode (in response to a SQL prompt).

1. EDIT COMMANDS

For purposes of the Editor, all lines of a SQL statement are considered to be numbered sequentially and must be referenced as such ("1" referring to the first line, "3" referring to the third line, etc.)

Line

This command is used to position to a specified line thus changing which line is the current line. The new current line will be displayed at the terminal.

```
L line-number
```

Add

This command adds a string of characters to the end of the current line. The string is considered to start with the first non-blank character (following the "A") and end with the last non-blank character on the line.

```
A string
```

Delete

This command is used to delete the current line. After the current line is deleted the new current line is the line after the deleted line. If the deleted line was the last line the new current line is the new last line.

```
D
```

Change

This command is used to change the contents of the current line. The changed line is displayed at the terminal.

C /string1/string2[/]

/	is a single character which delimits string1 and string2. Any character not contained in string1 or string2 may be used. The closing delimiter is optional.
string1	is the string to be searched for in the current line. If string1 is not found an error message is printed.
string2	is the string which replaces string1 if string1 is found in the current line.

String1 may contain an ellipsis (...). An ellipsis represents any number of intervening characters. There are are four possible ways to use an ellipsis:

string1...string2	is any string that starts with string1, continues with any number of intervening characters, and ends with the first occurrence of string2.
...string	is any string that starts at the beginning of the current line and ends with the first occurrence of string.
string...	is The first string that starts with string and ends at the end of the current line.
...	is the entire current line.

Insert

This command is used to insert a line after the current line. The inserted line becomes the new current line. The lines following the inserted line are specified with a number one greater than before the insertion (see the L command).

I new-line

new-line	is any string of characters to be inserted after the current line.

List

This command is used to list all lines of the current SQL statement.

LIST

Run

This command is used to cause the previously executed SQL statement, together with any editing performed on that SQL statement, to be executed.

R

2. UFI DISPLAY FORMAT COMMANDS

UFI Display Format commands are utilized to control the format of the display of the results of processing a SQL statement. These commands provide the following functions:

- Control the option of column headers being displayed.
- Control the line size.
- Specify display formats for data.
- Control default size of numeric data columns.
- Control the truncation/wrap-around option for display lines longer than the line size.

Column Headers

This command allows the user to alternately turn on and off the option of having column headers with the displayed data. When being used, column headers will appear once for each command. The column headers will be the ORACLE column names as specified in the table or view definition. When displayed data is the result of an expression or SQL function, the expression or function will be used as the header. The default condition is to display headers.

HEADING

This command will be followed by a message indicating that the heading option has been turned on or off.

Linesize

This command allows the user to override the default line size for UFI output (display of data returned by ORACLE in response to a SQL statement).

LINESIZE number

number	is the line size in bytes. The default size is 80 and the maximum size is 132.

Display Format

This command allows the user to specify display formats for particular columns of data being displayed as a result of a SQL query statement. If no display formats are specified,

- o character values will be displayed as character values with the length determined by the maximun size specified in the ORACLE data dictionary (as provided when the column was defined).
- o numeric values will be displayed as 10-digit numbers (unless overriden with the NUMWIDTH command). Fractional numbers will be displayed with as many fractional digits as possible within the field size.
- o fields which were entered with IAF as "date-type" fields will be displayed as a number representing a julian date.

The Display Format command is specified as follows:

```
FORMAT [ [col_name   ]    format ]
       [ [expression ]           ]
```

where:

col-name — is the column name within a database table.

expression — is the expression used in a SQL query (including arithmetic operators, constants, and SQL functions).

format — is the format definition as described in TABLE 3-1.

If the format command is used without specifying a format, it will have the effect of removing a previously specified format for the column or expression, and replacing it with the default. For example:

```
FORMAT salary
```

has the effect of removing a previously defined format for the salary column.

If the format command consists of only the term "FORMAT", UFI will display all formats which are currently specified as other than default.

TABLE 3-1 DISPLAY FORMAT SPECIFICATIONS

PARM	MEANING
An	defines a character field n bytes in length.
DATE	defines a date format (only for IAF entered data) of the form mm/dd/yy.
EDATE	defines a date format (only for IAF entered data) of the form dd/mm/yy.
9	defines each digit of a numeric variable. Leading zeros are not displayed.
.	defines the decimal point within a numeric variable. The position is used for arithmetic alignment and the period is displayed.
,	causes a comma to be inserted in the display. Omitted if there are no digits to the left of this position.
$	causes a dollar sign to precede the number.
MI	causes a minus sign to be displayed to the right of a negative number. The default is to the left.
PR	causes the variable to be displayed within "< >" brackets when negative.
0	may be used instead of a "9" to designate a digit. Normally leading zeros are suppressed, however a zero in the format will cause every digit position to be filled.
V	defines the position of a decimal point within a numeric variable. The position is used for alignment in arithmetic statements, but the decimal point is not displayed.
B	causes the variable to be displayed as blanks if the value is zero.

The following are examples of various formats:

Format	Value	Displayed
999.99	56.478	56.48
999V99	56.478	5648
9,999	8410	8,410
9,999	639	639
99999	607	607
09999	607	00607
9999	-5609	-5609
9999MI	-5609	5609-
9999PR	-5609	<5609>
B999	564	564
B999	0	
99.99	124.98	##.##
$99.99	45.23	$45.23
DATE	2441453	12/23/80
a20	Customer	Customer
A5	Customer	Custo mer

Notes:

1. If a numeric value is larger than the format allows, it is displayed as "#" signs.

2. If a character value is larger than the format allows, it is either truncated or wrapped around, depending on whether truncation or wrap-around is specified at the time (the default is truncation).

Number Width

This command allows the user to override the default size (10) for numeric fields. If specified, it will apply from that point forward for all columns containing numeric data.

NUMWIDTH number

number	is the column width in bytes. The default width is 10.

Wrap-around

This command specifies that if a line of UFI output is longer than the LINESIZE specification, the excess data will be wrapped around and displayed on successive lines. The wrapping of data will always occur on a field boundary (i.e., values will never be split at the end of a line). The maximum amount of data per row which can be returned by UFI in a SQL statement is 1000 bytes. Wrap-around is the default condition.

WRAP

Truncation

This command specifies that if a line of UFI output is longer than the LINESIZE specification, the excess data is truncated. The data will be wrapped unless this command is issued. If this command is issued, data will be truncated for the remainder of the UFI session, or until a WRAP command is issued.

TRUNC

3. UFI FILE COMMANDS

UFI file commands are used to create command files (files containing SQL statements which can subsequently be input to UFI as an alternative to terminal input). A command file can be executed from within UFI by simply entering a special character followed by the file name. The special character is the "@" sign, except in UNIX where the "!" is used. UFI file commands also are provided for creating output files for subsequent printing.

Save

This command is used to create and open an operating system file to be used as a command file, to write the current SQL statement to that file, and to close that file. Subsequent SQL statements can be added to the file with the APPEND command.

```
SAVE file-name
```

Append

This command is used to add the current SQL statement to an existing operating system file which was originally created with a SAVE command. The APPEND command opens the file, positioning it at the end; writes the current SQL statement to the file; and closes the file.

```
APPEND file-name
```

Spool

This command is used to open an operating system file to which all output generated by UFI will be written, or to cause a previously opened file to be closed and optionally scheduled for printing.

SPOOL option

option — determines which of the three functions will be performed as mentioned above. The options are:

file-name — Open the specified file for spooling. If a file for spooling is already opened, it will be closed.

OUT — Close the file currently opened for printing, and schedule that file for printing. This option assumes that the operating system supports spooling and that it has been generated to do so. Note that once the file has been printed, the file may, depending on the operating system, be deleted.

OFF — Close the file currently opened for spooling.

Page

This command causes a form feed to be placed in the open spool file.

PAGE

3. UFI CONTROL COMMANDS

Change Database

This command allows the user to close the current database and open another database without terminating UFI. If the database being opened is a secure database, the user-name and password parameter must be specified. If there is an error in opening the new database, an error message will appear and the previous database will still be open.

DBS database-name [user-name/password]

Terminate UFI

This command terminates a UFI session.

EXIT

Worksize

This command sets the size of the SQL Work Area for this user (terminal) in the ORACLE communication region. This command would be used in response to an ORACLE error message indicating insufficient space in the SWA.

WORKSIZE number

number	is the size of the SWA in K bytes. The number specified must be from 1 to 16. The default value of 3 has been determined to be adequate for the majority of SQL statements.