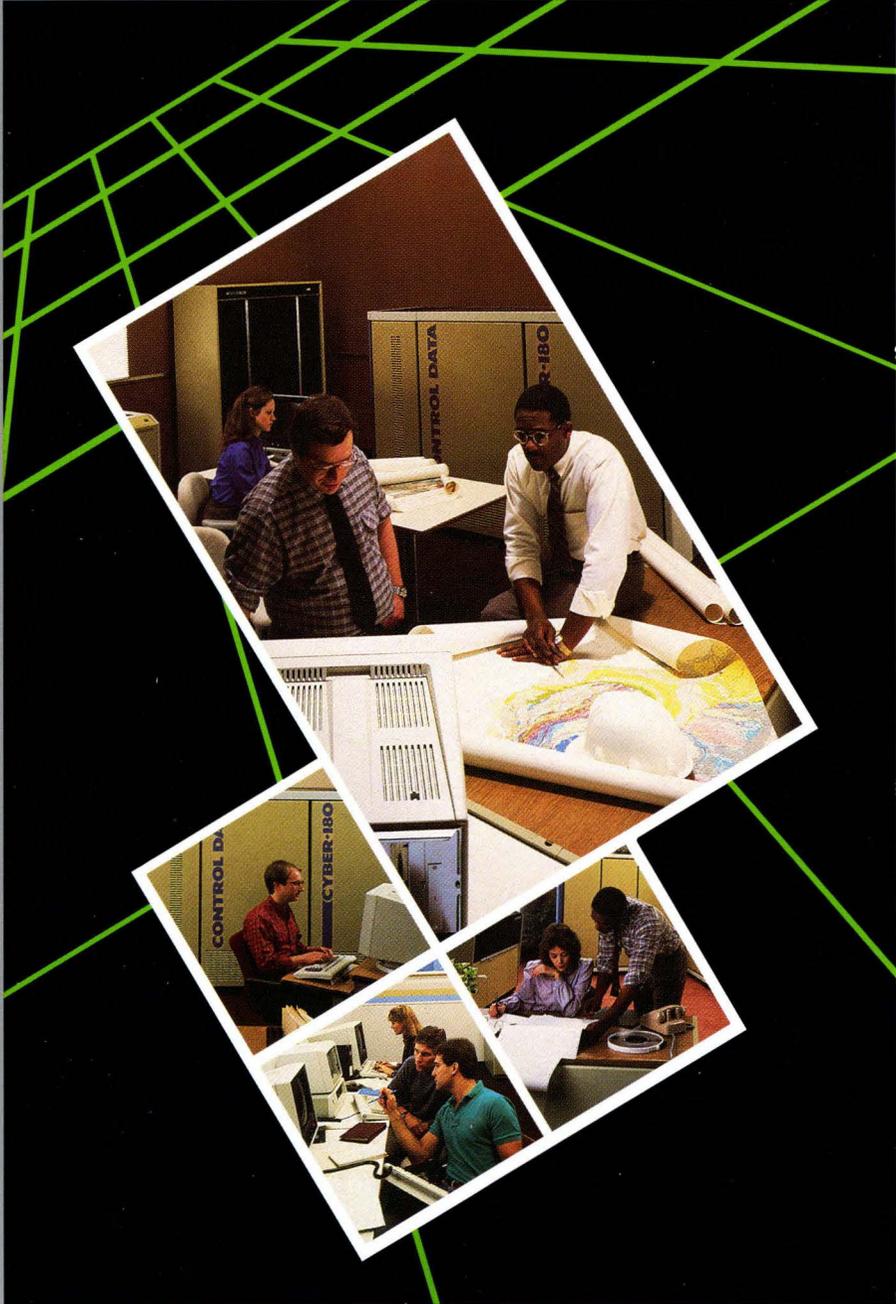


Screen Design Facility



Usage

60488613



Screen Design Facility

Usage

This product is intended for use only as described in this document. Control Data cannot be responsible for the proper functioning of undescribed features and parameters.

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Revision D documents SDF Version 1.3 under NOS/VE Version 1.3.1 at PSR level 700. It was published in April of 1988. This revision describes the redesign and new features associated with the CREATE, PROFIL, ZOOM and SEEDEF functions, reordering and renaming of function key assignments, describes the new ATTRIB feature, and new items on existing screens. Additionally, various editorial changes were made.

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About This Manual

Audience

This manual describes: how SDF works; how to use SDF editing functions to create and edit screens and perform other functions associated with screens you create or edit.

The manual is written for technical and non-technical users who are creating application programs written in FORTRAN, COBOL or CYBIL programming languages that will run in a full-screen environment.

Organization

This manual is organized to enable you to easily and quickly find the information needed to create and/or edit screens. The section titles and subsection titles are task oriented; for example, Defining Attributes. Each SDF presentation screen is presented and then the functions associated with the screen are described.

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or you can call (612) 292-2101. If you are a Control Data employee, call (612) 292-2100.

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When building an application program in FORTRAN, COBOL or CYBIL, the application developer can provide a full-screen environment for the end user of the application. In a full-screen environment, the end user is presented with screens that look like paper forms (such as a tax form, invoice or order form) that are used in non-computer related activities to record and receive information. As with a paper form, the items on a screen are organized for quick recognition and response by the user. For example:

EMPLOYEE INFORMATION

Name: _____	Birthdate: ___ / ___ / ___
Home address: _____	
City, State: _____	
Zip Code: _____	
Hire date: ___ / ___ / ___	
Job title: _____	Grade: _____
Dept. number: _____	Facility: _____
Division name: _____	
Salary: _____	Exemptions: _____

The Screen Design Facility (SDF) is one of the tools that can be used to provide a full-screen environment.

SDF is an easy to use, interactive tool the application developer uses to create, modify and maintain the display and data entry screens that are presented to the end user of the application.

The other tool, Screen Formatting, is a set of subroutines and procedures that manage the screens in the application program. For example, you use Screen Formatting to display and remove the screens from the application users screen. To provide a full-screen environment for an application, the application developer includes calls to the procedures or subroutines in the application program. For more information, please refer to the Screen Formatting Usage manual.

Introduction

A screen created by SDF can contain fields made up of:

- Constant text, such as titles, menus, instructions, and column headings.
- Variables and tables made up of variables into which the application user can input data or the application program can output data.
- Lines and boxes used to identify where data can be input or output, frame a screen, decorative purposes, and so forth.

For any type of field you enter on a screen, you can define various highlighting (such as inverse video, blinking, and underlining). For variables and tables you can define other attributes (such as type of data, how data can be input or output, and maximum number of characters).

SDF also provides a wide variety of editing functions that enable you to:

- Specify characteristics to be associated with the screen, such as, type of programming language that will access the screen, screen width and height, and where the screen will be located on the users terminal screen.
- Move, copy, center, erase and define fields on a screen.
- Display, save and delete screens.
- Assign function keys for the screen.
- Assign attributes for the entire screen. These attributes can be used dynamically by the application program for special cases, such as highlighting a field when erroneous data is entered.

In addition to creating and editing screens in SDF, you can also:

Learn to use SDF by accessing the online manual from SDF.

SDF Overview

SDF is organized as a hierarchy of screens. On each screen presented, you make choices to perform the various functions available for creating and editing a screen. Depending on the choices you make, you are taken through a particular path of the hierarchy of screens.

The choices are displayed in the form of function key prompts at the bottom of the screen or a list of items (such as a list of screens). Instructions on each screen tell you how to make choices on the screen. Your choice is communicated to SDF by pressing a function key or by positioning the cursor next to an item and pressing a function key.

At anytime during an SDF session, you can return through the hierarchy of screens and retrace the path you have taken. On any screen in the return path, you can make new choices if desired. An example of taking one path through the hierarchy is shown below.

Help is available for virtually every item and function key displayed on an SDF screen. Three levels of help are available. The first level is a short reminder of the meaning of the item; the second level is a more detailed explanation of the meaning of the item; the third level accesses the online manual location where the item is described in detail.

After accessing SDF, you are presented with the SDF Banner screen. From this screen you select the type of session to be initiated. The Banner screen is shown below:

```

->SDF                                     NOS/VE SCREEN DESIGN FACILITY
                                         Version 1.3

                                     BANNER
-----
Choose the first activity you wish to perform

Press LEARN to learn how to use SDF
Press EDIT to create or edit a screen
Press HELP to get help with this screen
Press QUIT to exit SDF

F1 Learn  F2 Edit  F3 [ ]  F4 [ ]  F5 [ ]  F6 Quit  F7 [ ]  F8 [ ]

```

The LEARN session takes you to the SDF Online Usage manual which provides you with information about how to use SDF.

The EDIT session is the entry point for creating and editing screens.

SDF Overview

For this example, you want to create a new screen, so you choose EDIT on this screen. The next screen presented is the Select screen.

```
SDF                                     NOS/VE SCREEN DESIGN FACILITY
->SELECT                                SELECT SCREEN

APPL09
Departmental_Payroll_Screen
HELPER
INITFORM
SCREEN1
SCREEN11
SCREEN12
TEST-SCREEN
Employee Information
Salary History

Tab or position cursor to select a screen
Press key for function desired

F1 Create F2 Select F3 Show F4 Delete F5 Undo F6 Quit F7 Profil F8
```

On this screen you can choose to:

- CREATE a new screen.
- SELECT an existing screen for editing.
- SHOW or DELETE an existing screen.
- UNDO a previous DELETE function.
- QUIT the SDF session and return to NOS/VE.
- Display and change the profile of an existing screen (PROFIL).

For this example, you will choose CREATE on this screen. When you create a new screen, the Define Screen Profile screen is displayed automatically for defining the screen characteristics.

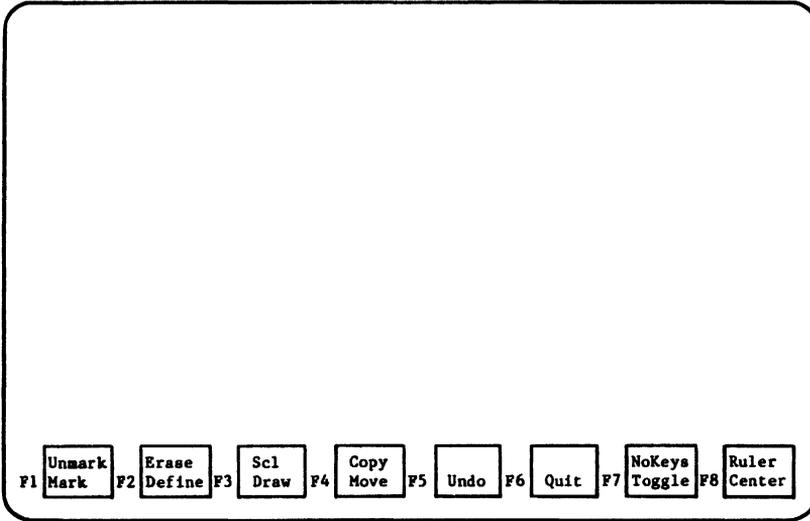
SDF		NOS/VE SCREEN DESIGN FACILITY	
SELECT		DEFINE ATTRIBUTES	
->PROFIL			
Attribute	Value(s)		
Programming Language:	_cobol _ansi fortran _CDC fortran _cybil		
Background color:	_black _blue _green _magenta _red _cyan _yellow _white		
Foreground color:	_black _blue _green _magenta _red _cyan _yellow _white		
Screen border:	_fine _medium _bold _none		
Screen width:			
Screen height:			
x-origin:			
y-origin:			

Fill appropriate blanks			
Type any character next to list choices			
Use SYSTEM or REPEAT for defaults			
Press FINISH when completed, or CANCEL to cancel			
F1	System	F2	Repeat
F3	Finish	F4	Cancel
F5		F6	
F7		F8	

On this screen, you enter the characteristics for the screen you are going to create, such as, the programming language of the application accessing the screen, background and foreground color, height and width of the screen and the position the screen will occupy on the end users terminal screen.

SDF Overview

When the screen profile is completed, a blank screen called the User Edit screen is displayed next.



On this blank screen, you enter the fields that make up the screen you are creating. You can use the editing functions displayed at the bottom of the screen to: define attributes for the fields you enter, such as, type of data and highlighting; copy, move, center or erase fields; assign function keys for the screen; and perform other functions related to the screen you are creating. Depending on the editing functions you select, more screens in the hierarchy may be presented.

The screen you are creating can be any size desired; the maximum size is the size of the terminal display you are using or 80 columns, whichever is less. The minimum size is 1 row 1 column.

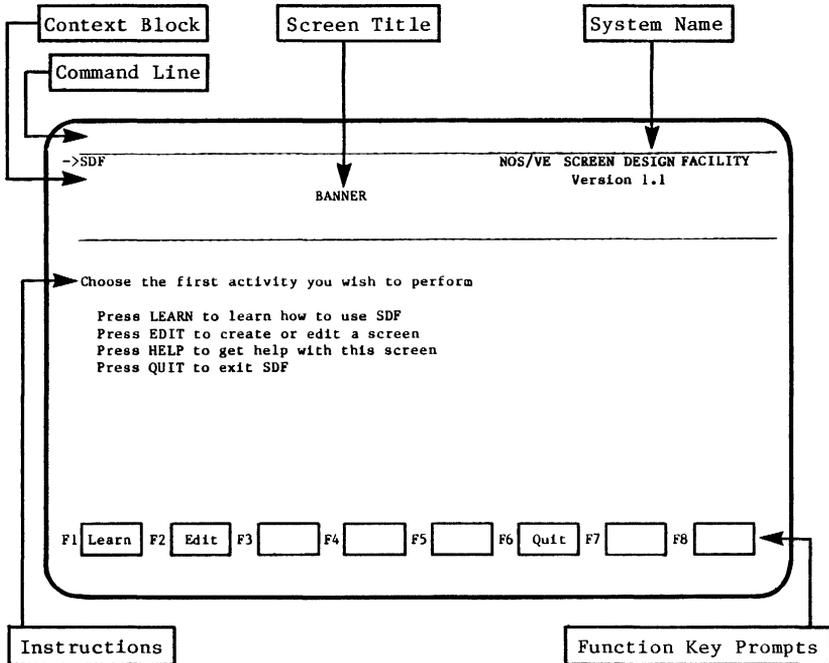
The size flexibility enables you to design multiple screens for display on a user's terminal screen at the same time. When creating multiple screens, each screen must be defined separately. The screens can then be displayed in any order by the application program.

As you progress in creating or editing a screen, the effects of your actions are immediately visible. When you finish, you can exit, save the new or changed screen and/or start another SDF activity.

SDF Conventions and Rules

SDF Screen Layout

As you use SDF, you are presented with screens that look very much like the screen shown below. The items shown with arrows represent conventions that appear on all SDF presentation screens.



Descriptions of these conventions are provided below.

Command Line

On all screens presented during an SDF session, a command line is provided for entering and executing NOS/VE SCL commands while in the SDF environment.

On most terminals, pressing the HOME key positions the cursor on the command line which is normally line 1 on the screen. SCL commands are entered on this line.

On terminals that do not have a labelled HOME key, you must use the cursor control keys on your terminal to move the cursor to the command line.

When creating or editing a screen, a function key is provided for SCL command entry in order to make the home line area available to the screen designer.

Context Block

The context block provides a dynamic record of the path you have taken in the hierarchy of SDF screens to arrive at the screen currently displayed.

The context block is located in the upper left corner of each SDF screen.

Your present location in the SDF hierarchy is indicated by an arrow to the left of the list. For example, the following indicates you are currently in an editing session:

```
SDF  
->EDIT
```

Screen Title

The screen title, located at the top center of each screen (except on a screen you are editing or creating), is the name of an SDF screen. The screen title is always in capital letters. The following is a list of SDF screen titles and a short description of the screen.

BANNER

This is the first screen presented; you choose the type of session on this screen (LEARN or EDIT).

SELECT

This screen is presented when you select an EDIT session from the Banner screen. On this screen you can select to create a new screen, select an existing screen for editing or perform other functions pertaining to a selected screen.

DEFINE SCREEN PROFILE

When you use the CREATE function to create a new screen, this screen is displayed automatically for defining the screen profile. To access this screen to change an existing screen profile, position the cursor next to the name of a screen on the Select screen and press the PROFIL function key.

USER EDIT SCREEN

The User Edit screen is displayed when you select an existing screen for editing or select to create a new screen. When you select an existing screen for editing, the selected screen is displayed. When you choose to create a new screen, the Define Screen Profile screen is displayed first. After completing the screen profile, the User Edit screen is displayed blank. You create your new screen on this blank screen.

In either case, the User Edit screen is displayed with the editing functions represented as function key prompts at the bottom of the screen. There are two sets of function key prompts available. You can toggle between the two sets of keys to use the editing functions necessary to accomplish your editing.

DEFINE ATTRIBUTES

This screen is presented for defining attributes for a field on a screen you are creating or editing. There is a different Define Attributes screen for each type of field you can enter on a screen. They are: constant text, character variable, numeric variable, table, box or line. You specify the type of field, and the appropriate screen is displayed.

DEFINE ATTRIBUTE GROUPS

This screen is displayed when you use the secondary editing function ATTRIB on the User Edit screen. The screen is used to define attributes for a screen. These attributes are saved with the screen definition and will be available for dynamic use by the application program using the screen. For example, the application program can access these attributes when it is necessary to show dynamic highlighting for error cases.

DEFINE FUNCTION KEYS

This screen is presented for assigning function keys for the screen you are creating or editing.

System Name

Specifies the name of the system and the version number.

Instruction Lines

Instruction lines tell you how to use or process information on a screen. For example,

Tab or position cursor to select a screen
Press key for function desired

On most SDF screens, instruction lines are located at the bottom of the screen. In some cases, instruction lines are located above a list of choices displayed on the screen.

Function Key Prompts

When function keys are active for a given screen, the logical meanings and assignments are displayed as one or more rows of function key prompts at the bottom of the screen. For example:

F1 F2 F3 F4 F5 F6 F7 F8

Using an Imaginary Box

Function key prompts indicate the different functions you can perform by pressing the corresponding function key. On some screens, two functions are listed for each function key. To initiate a function listed on the upper line, you must use the uppercase SHIFT key on your terminal. The lower line functions are initiated in an unshifted mode.

Note that on different terminals, the location of specific function key assignments may vary.

If you press a function key that is not active for the screen you are using, the following error message is displayed:

```
-- Key has no meaning for cursor position.
```

To remove the message from the display, press the BACK key.

Using an Imaginary Box

When using many of the SDF editing functions, the area on the screen to be edited must be identified before the editing function can be performed. SDF uses a convention of an imaginary box to identify the area to be edited.

An imaginary box is temporarily created by marking the area to be edited. SDF provides a MARK function key for this purpose.

When you create an imaginary box, you mark two opposing corners of a rectangle enclosing the area to be edited, for example, upper left corner and the lower right corner.

Areas on the screen that have already been defined are marked by positioning the cursor anywhere on the area and pressing the MARK function key.

To perform an editing function on multiple fields, whether defined or undefined, you must mark an imaginary box around the fields; encompassing the width and height of the area you wish to edit.

An imaginary box is shown highlighted on your screen. The memory of of an imaginary box lasts until it is moved, erased, defined, another field is marked, or until the area is UNMARKed.

Terminal Keys

When using SDF, some terminal keys are necessary to perform certain functions, such as paging and scrolling.

Some of these keys are present on all terminals, while others may NOT be present as labelled keys on a terminal being used for an SDF session. When these keys are not present on the terminal in use, they are, in some cases, assigned to function keys and are represented as function key prompts at the bottom of the screen or defined as a special sequence of keys you press. The keys are:

```
NEXT
BACK
HELP
HOME
FWD
BKW
UP
DOWN
```

These keys are described below:

NEXT Key

Pressing the NEXT key signals the completion of an activity.

The NEXT key (RETURN or NEW LINE key on some terminals) is present on all terminals and is never represented by a function key prompt.

BACK Key

Pressing the BACK key means return to the previous context (as indicated by the context block in the upper left corner of the screen).

If the BACK key is not present on your terminal, it is represented by a function key prompt at the bottom of the screen, or defined as a special sequence of keys you press.

If you press the BACK key after making editing changes on a screen and you have not saved the screen, SDF offers you a chance to do so by displaying the following message:

```
Press NEXT to replace existing screen.
Enter unique name, press NEXT to save new screen.
Press BACK to discard screen, QUIT to exit SDF.
```

```
Record definition output will be produced in
_cobol _ansi fortran _cdc fortran _cybil
```

Press the NEXT key to replace an existing screen to which you have made changes. Enter a unique name and press NEXT to save a new screen, press the BACK key to discard the screen, or press QUIT to exit SDF (the screen will also be discarded).

Terminal Keys

The line at the bottom of the overlay is provided for indicating the programming languages for which you want a record definition generated for the screen. The language checked is the language specified when you defined the screen profile. You can enter any character next to as many of the languages as desired. There will be one SCU deck generated for each language selected. If no languages are selected, no record definitions will be generated.

HELP Key

Pressing the HELP key calls the help facility regarding the item where the cursor is positioned.

If the HELP key is not present on your terminal, it is represented by a function key prompt at the bottom of the screen, or defined as a special sequence of keys you press.

HOME Key

Pressing the HOME key moves the cursor to the command line on the terminal. When the cursor is positioned on the command line, you can enter and execute NOS/VE SCL commands while in an SDF session.

The command line may be at the top or at the bottom of the terminal display depending on the terminal model.

If the HOME key is not present on your terminal, you must use the cursor control keys on your terminal to move the cursor to the command line.

FWD Key

Pressing the FWD key means page the text at the cursor position forward one logical page. For example, when the list of screens shown on the Select screen exceeds one page, the FWD key is used to page forward to see the next page of the list.

If the FWD key is not present on your terminal, it is represented by a function key prompt at the bottom of the screen.

BKW Key

Pressing the BKW key means page the text at the cursor position back one logical page. For example, after paging forward with the FWD key, the BKW key is used to page back to the previous page.

If the BKW key is not present on your terminal, it is represented by a function key prompt at the bottom of the screen.

UP Key

The UP key moves the line where the cursor is positioned up to the top of the screen.

If the UP key is not present on your terminal, it is represented by a function key prompt at the bottom of the screen.

DOWN Key

The DOWN key moves the line where the cursor is positioned down to the bottom of the screen.

If the DOWN key is not present on your terminal, it is represented by a function key prompt at the bottom of the screen.

Using the Help Facility

Help is available for every SDF screen and for virtually every item and function key prompt displayed on the screen.

To get screen or item help, position the cursor on the screen name, a blank space on the screen, or on a specific item on the screen. Then press the HELP key.

To get function key help, you must press the HELP key to enter the Help Facility. Then press the function key for which you want help.

Three levels of help are available:

First level -

Press the HELP key once; a one line reminder of the meaning of the item, function key or screen is displayed at the bottom of the screen. For example:

MARK - Remember cursor position to identify item, box or line.
Press HELP for more help, F-key for key help, NEXT to exit help

Second Level -

Press the HELP key a second time; a more detailed explanation of the item, function key or screen is displayed at the bottom of the screen. For example:

MARK - Remember cursor position to identify item, box or line.
An item, box or line may be marked and copied or moved with its attributes.
Draw a box after making two non-adjacent corners.
Draw a line by marking its beginning and ending characters.
Mark an imaginary box to copy, move or erase an area of the screen.

Press HELP for more help, F-key for key help, NEXT to exit help

Error Processing

Third Level -

Press the HELP key a third time; you are taken out of SDF to the online manual for complete information about the item, function key or screen.

In the online manual, the help information is displayed on the whole screen, and you must use the online manual instructions for paging through the manual.

To return to SDF from the online manual, enter the following:

QUIT

When the first and second levels of help are displayed for a screen, item or function key, you can:

- Position the cursor on another item and press the HELP key for help with that item.
- Press another function key for help about that function.
- Press the NEXT key to exit the Help Facility and return to what you were doing before entering the Help Facility.

When you request the third level of help, you enter the online manual. When in the online manual you cannot request additional help. You can only page through the manual, or enter QUIT to return to SDF.

Error Processing

When you attempt to do something which is out of context or against the rules, SDF displays an error message on the screen. For example:

```
-- MARK an area or entity before using DEFINE  
  
Press NEXT to return to SDF
```

Press the NEXT key to delete the message. Depending on the nature of the message, you may want to try what you were doing again, or you may decide not to pursue what you were trying to do.

NOTE

Function keys are not operational when an error message is displayed. Pressing any function key will only clear the message from the screen and return to SDF.

If you press a function key that is not active for the screen you are using, the following error message is displayed:

-- Key has no meaning for cursor position.

To remove the message from the display, press the BACK key.



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Terminal Requirements

SDF uses the Terminal Definition Utility and Screen Formatting to control the terminal interface to the end user. For more information, please refer to the Terminal Definition Usage manual and the Screen Formatting Usage manual.

To create, modify and maintain screens using SDF, the terminal must have a minimum of 24 lines of at least 80 characters per line, and 16 function keys. The function keys can be in the form of eight shiftable keys.

Accessing SDF

To begin an SDF session, you must login to the NOS/VE system, and type the following SCL command:

```
DESIGN_SCREEN or DESIGN_SCREEN (DESS)
  LIBRARY=file
  MODE=keyword
  SCREEN_NAME=name
  SOURCE=file
  STATUS=status variable
```

Parameters for the DESS command:

LIBRARY(L)

The file path to the object library to be used for this SDF session. All object screen modules for this SDF session are extracted from and/or placed in this library. The default library is SCREEN_LIBRARY in the current working catalog. The maximum number of screens that can be stored in your library is 250.

Note that the object library used by SDF can be maintained by the CREATE_OBJECT_LIBRARY utility.

MODE(M)

MODE is the session mode (EDIT or LEARN).

Use this optional parameter to bypass the SDF Banner screen and go directly to the session mode indicated by the keyword. If not specified, the session mode is selected by you from the SDF Banner screen.

SCREEN_NAME(SN)

The name of an existing screen in your object library.

This optional parameter causes immediate entry into an edit session with the named screen displayed. You bypass the Select screen from which you select a screen.

NOTE

The MODE parameter takes precedence over the SCREEN_NAME parameter.

SOURCE(S)

The file path to the file in which to write a record definition for any screen that is saved in the object library specified by the LIBRARY parameter.

The record definition is a generated source code description of all the variables defined for the screen. The definitions are written in the programming language of the application using the screen.

Each definition is in the form of a source text record that can be used as input for SCU. The screen name is used as the name of the deck.

If you do not specify a complete file path, the record definitions are written to the file SCREEN_SOURCE in the working catalog.

NOTE

Each time you save a screen, the record definition is appended at the end of the specified source file. You may have more than one record definition for a screen in the source file. If you leave the session and start another session, the source file is cleared and you can start over again.

STATUS

Optional status variable.

Accessing SDF Summary

There are three ways to access SDF when you login with the DESS command.

1. Enter the DESS command without the MODE or SCREEN_NAME parameters. The SDF Banner screen is the first screen displayed at your terminal. From the Banner screen, you select the type of activity you want to perform (LEARN or EDIT).
2. Enter the DESS command with the SCREEN_NAME parameter. You immediately enter Edit mode with the specified screen displayed at your terminal. You can begin editing the displayed screen.
3. Enter the DESS command with the MODE parameter. If you enter MODE=EDIT, you immediately enter Edit mode with the Select screen displayed. From the Select screen you can choose to create a new screen, select, display or delete an existing screen, and perform other functions related to a selected screen. If you enter MODE=LEARN, you are taken to the online manual for help with SDF.



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Table of SDF Functions

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Choosing a Session Type (The Banner Screen)

When you sign on to SDF, the SDF Banner screen is displayed first.

```
->SDF                                     NOS/VE SCREEN DESIGN FACILITY
                                         Version 1.3

                                     BANNER

-----

Choose the first activity you wish to perform

  Press LEARN to learn how to use SDF
  Press EDIT to create or edit a screen
  Press HELP to get help with this screen
  Press QUIT to exit SDF

F1 Learn F2 Edit F3 [ ] F4 [ ] F5 [ ] F6 Quit F7 [ ] F8 [ ]
```

Description

The Banner screen is at the top of the SDF screen hierarchy. The type of SDF session is selected from this screen.

To access the Banner screen:

- Signon to SDF using the DESS command without the MODE or SCREEN_NAME parameters, or
- Return through the hierarchy using the BACK function key.

The following functions are available on the Banner screen. Choose the type of session by pressing the appropriate function key.

- | | |
|-------|--|
| LEARN | Enters the SDF Online Usage manual. |
| EDIT | Enters the SDF EDIT mode to create or edit a screen. |
| HELP | Displays text explaining the Banner screen. |
| QUIT | Ends the SDF session. |

Banner Screen Functions

The Banner screen functions are described below.

Accessing the Online Manual (LEARN Function)

The LEARN function exits SDF and enters the SDF Online Usage manual. The online manual provides detailed information about SDF.

To initiate the LEARN function, press the LEARN function key.

While you are in the online manual, you must follow the instructions for the online manual system to page through the manual. Please refer to the CONTEXT Usage manual.

To come back to SDF from the online manual, enter the following:

QUIT

Getting Help With the Banner Screen (HELP Function)

The HELP function provides an explanation of the Banner screen.

To get help, press the HELP key. On terminals that do not have a labelled HELP key, the appropriate key to press is indicated by a function key prompt at the bottom of the screen.

After you enter the Help Facility, you can press any function key and get help about that function.

Press the NEXT key to clear the help message from the screen.

Ending an SDF Session (QUIT Function)

The QUIT function ends an SDF session and returns you to NOS/VE.

If you press the QUIT function key from the Banner screen, or from the Select screen, you are immediately returned to NOS/VE.

If you press QUIT after using an editing function on a new or existing screen, and you have not used the SAVE function, SDF offers you a chance to save the screen by overlaying the screen with the following message:

Press NEXT to replace existing screen.
Enter unique name, press NEXT to save new screen.
Press BACK to discard screen, QUIT to exit SDF.

Record definition output will be produced in
_cobol _ansi fortran _cdc fortran _cybil

Press the NEXT key to replace an existing screen to which you have made changes. Enter a unique name and press NEXT to save a new screen, press the BACK key to discard the screen, or press QUIT to exit SDF (the screen will also be discarded).

The line at the bottom of the overlay is provided for indicating the programming languages for which you want a record definition generated for the screen. The language checked is the language specified when you defined the screen profile. You can enter any character next to as many of the languages as desired. There will be one SCU deck generated for each language selected. If no languages are selected, no record definitions will be generated.

If you press QUIT and you have not used an editing function, the message is not displayed; the session is ended and the entries are discarded.

**Initiating an Editing Session
(EDIT Function)**

The EDIT function on the Banner screen initiates an editing session. When you press the EDIT function key, the Select screen shown below is displayed:

SDF		NOS/VE SCREEN DESIGN FACILITY
->SELECT	SELECT SCREEN	
APPL09 Departmental_Payroll_Screen HELPER INITFORM SCREEN1 SCREEN11 SCREEN12 TEST-SCREEN		
Tab or position cursor to select a screen Press key for function desired		
F1 Create	F2 Select	F3 Show
F4 Delete	F5 Undo	F6 Quit
F7 Profil	F8	

Initiating an Editing Session

Description

The Select screen is the entry to an editing session. From this screen, you can choose to create a new screen or select an existing screen for editing. You can also delete or display an existing screen, cancel a previous delete function and display and change the profile of an existing screen.

If you previously created screens using SDF, the Select screen displays a list of those screens. These screens can reside in the object library specified on the DESS command when you signed on to SDF, or if you did not specify an object library, a list of the screens that reside in your default library SCREEN_LIBRARY (in your working catalog) are displayed.

The maximum number of screens that can be displayed in the list of screens is 12. If you have more screens than are displayed, the paging and scrolling keys can all be used to examine the list of screens. The paging and scrolling keys are: FWD, BKW, UP and DOWN.

To access the Select screen, you can either:

- Choose the EDIT function on the Banner screen.
- Access SDF with MODE=EDIT on the DESS command.
- Return through the hierarchy using the BACK function key.

The following functions are available on the Select screen. Choose a function by pressing the appropriate function key.

CREATE	Initiates the creation of a new screen.
SELECT	Selects an existing screen for editing.
SHOW	Displays the selected screen.
DELETE	Deletes a screen from the library.
UNDO	Cancel a previous delete function.
QUIT	Ends an SDF session.
PROFIL	Initiates changes to a selected screen profile.

The functions on the Select screen are described below.

Select Screen Functions

Creating a Screen (CREATE Function)

The CREATE function is used to create a new screen. To create a screen two things are done:

1. Define the screen profile. When you press the CREATE function key, the Define Screen Profile screen is automatically displayed. On this screen you must specify the characteristics of the screen, which are: the programming language of the application that will access the screen, background and foreground color of the screen, the thickness of the screen border if applicable, the screen width and height, and the position that the screen will occupy on the end users terminal display.
2. Design the screen. When you complete the screen profile, a screen called the User Edit screen is automatically displayed for designing and defining the fields that will appear on the screen.

Defining the Screen Profile

When you press the CREATE function key the first screen displayed is the Define Screen Profile shown below:

```

SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT                                DEFINE SCREEN PROFILE
->PROFIL

Attribute                               Value(s)

Programming Language:  _cobol _ansi fortran _CDC fortran _cybil
Background color:     _black _blue _green _magenta _red _cyan _yellow _white
Foreground color:     _black _blue _green _magenta _red _cyan _yellow _white
Screen border:        _fine _medium _bold _none
Screen width:
Screen height:
x-origin:
y-origin:

```

```

Fill appropriate blanks
Type any character next to list choices
Use SYSTEM or REPEAT for defaults
Press FINISH when completed, or CANCEL to cancel

```

F1 F2 F3 F4 F5 F6 F7 F8

SCREEN HEIGHT: _____

(OPTIONAL)

Enter the height of the screen, in lines. The maximum height is the height of the screen you are using and is the default. The minimum height is 1 line.

X-ORIGIN: _____

(OPTIONAL)

Enter the column on the end users terminal display that will be the left edge of this screen when displayed. The default is column 1.

Y-ORIGIN: _____

(OPTIONAL)

The line number, on the end users terminal display, that will be the top line of this screen when displayed. The default is line 1.

If you want the size of the screen to adjust automatically to the size of any terminal on which the application is processed, leave screen height, width, x-origin and y-origin blank. The screen size will be variable and will adjust automatically according to terminal type.

When values are entered for screen height, width, x-origin and y-origin, the screen size is set to the size specified. When the defaults are used for these definitions, the screen size is set to the size of the terminal you are using. In either case, the screen size will not adjust automatically to different terminal types.

When you complete defining the screen profile, press the FINISH key. The definition is then processed and the User Edit screen is displayed. The User Edit screen is where you design the images that will appear on the screen you are creating.

Designing the Screen

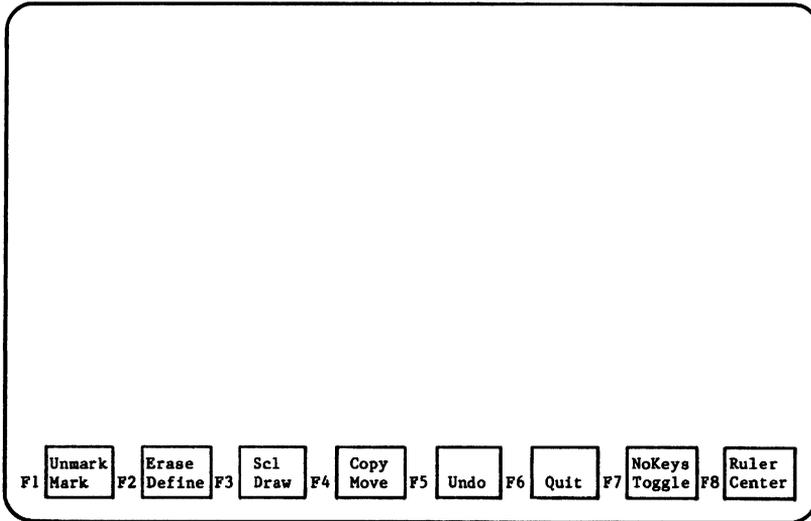
When the screen profile is complete, the User Edit screen is displayed automatically. The User Edit screen is displayed with the editing functions shown as function key prompts at the bottom of the screen. You design the screen you are creating on this screen.

If you specified the defaults on the Define Screen Profile screen, the User Edit screen is blank when displayed. You can design the screen anywhere on this blank screen.

If the screen is defined to be smaller than the terminal screen you are using, the screen is still blank, however, the defined screen is displayed in column 1, line 1 with a horizontal and vertical line surrounding the area defined as the screen size. You can only design the screen within these lines.

Creating a Screen

An example of a blank User Edit screen is shown next.



Creating and editing screens is the major activity of an SDF session, and the editing functions are used to perform these two activities.



The functions shown above are the MAIN editing functions you see when the User Edit screen is displayed. The functions listed on the top line are initiated by pressing the SHIFT key and the indicated function key. Pressing the TOGGLE key displays the SECONDARY editing functions.



Pressing the TOGGLE key again will display the MAIN editing functions again. To use an editing function, it must be displayed at the bottom of the screen.

The editing functions are briefly described next. Detailed descriptions are provided later in this manual.

ATTRIB	Defines dynamic attributes for the entire screen.
CENTER	Centers a field horizontally on the screen.
COPY	Copies a field from one location to another on the screen.
DEFINE	Defines attributes for fields on a screen you are creating.
DRAW	Draws a line or box.
ERASE	Erases a field.
EVENTS	Defines function keys for a screen you are creating.
MARK	Marks a field for using an editing function.
MOVE	Moves a field from one location to another on the screen.
NOKEYS	Turns off the display of function key prompts.
QUIT	Ends an SDF session.
RULER	Displays character and line positions on the screen.
SAVE	Saves a screen.
SCL	Enables the user to enter an SCL command.
SEEDF	Displays the screen profile and the defined dynamic attributes.
SHOW	Displays the screen you are creating or editing.
TOGGLE	Displays either the MAIN or SECONDARY editing functions.
UNDO	Cancels an editing change.
UNMARK	Unmarks a marked field.

NOTE

The exact placement of function key assignments is dependent on the terminal model you are using. All examples in this manual are of the CDC721 terminal.

Many of the editing functions require that your first mark the area to be edited using the MARK function. After marking the area, press the appropriate function key for the function you want to perform. For example:

- To MOVE, COPY, CENTER, and ERASE a field, first MARK the field and then press the indicated function key for the function you want to perform.

Creating a Screen

- To change a field, MARK the area, then press the ERASE function key to delete the field. You can then type new information in the same area and redefine the field.
- To define attributes for a field, MARK the field first, then use the DEFINE function key. You are prompted to indicate the type of data you want to define (constant text, numeric or character variable, or table). After indicating your choice, the appropriate Define Attributes screen is displayed. The desired attributes for the field are entered on this screen.

You can now begin creating your screen. Creating a screen is like painting a picture; except in this case, the paint brush is your keyboard. You simply design the screen as you want it to appear. Each item that you enter on the screen is called a field.

SDF allows you flexibility in how you design the screen. You can: type constant text, such as titles, column headings and instructions in the desired areas; use the DEFINE function to define fields; use editing functions to perform a variety of functions on the screen you are creating; and draw graphics (lines and boxes) on the screen.

For any type of field entered on a screen, you can define various highlighting styles (such as inverse video, blinking, and underlining). For variables and tables you can define additional attributes (such as, type of data, how data can be input or output and maximum characters).

A screen created by SDF can contain fields made up of:

CONSTANT TEXT

Character strings, such as titles, instructions, menus and column headings. You simply type the fields at the location you want them to appear. You can change such text by typing over it. Constant text does not have to be defined unless display attributes are desired. After defining constant text, it becomes protected and cannot be changed.

VARIABLES

Numeric and character variables that can be changed by the user or a program. Variable fields can be single fields or part of a table. The location of a variable field must be marked and then defined to specify its size, type, I/O mode, and highlighting.

TABLES

Areas on the screen containing one or more occurrences of variables. Tables are generally made up of variable fields organized in rows and columns. The first occurrence of each variable that is part of a table must be defined as variables. To define a table, you must MARK an area enclosing the first occurrences of each variable, or the entire area the table will occupy and use the DEFINE function. See Creating a Table later in this section for details.

LINES and BOXES

Graphics that can be used, for example, to identify areas on the screen where data can be input, to frame a screen or indicate the boundaries of a table. You can only define highlighting attributes to a line or box.

Example of Designing a Screen

The following pages illustrate how to design the sample screen shown below. You can signon to SDF and use this example to acquaint yourself with how to use SDF.

The screen has constant text fields, numeric and character variables, a table with ten occurrences of variables, and a highlighted line drawn on it. When the screen is displayed by the application program, the end user enters a Department Number. The Name, Title and Salary for each employee in the specified department are displayed by the application program.

Enter the Department Number: _____

NAME	TITLE	SALARY
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Entering Constant Text

Constant text fields are simply typed at the location you want them to appear on the screen, or you can place these fields anywhere on the screen and move them around at any time using editing functions. Constant text fields do not have to be defined unless highlighting is desired. Before constant text is defined, it can be changed by simply typing over it. After defining constant text, it becomes protected and cannot be changed. The constant text fields on the sample screen are:

Enter the Department Number:
 NAME, TITLE and SALARY

Creating a Screen

For this example, inverse video will be defined for the field, Enter Department Number: . The following illustrates how these fields are entered on the screen:

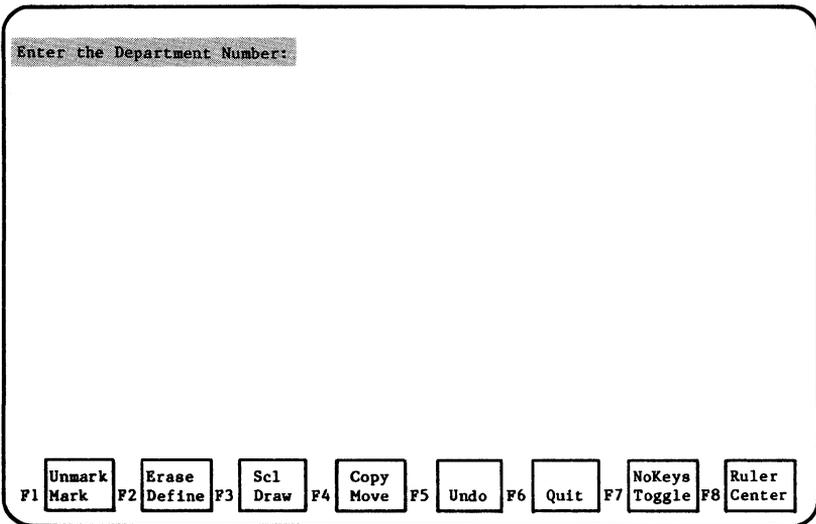
1. Type the following on the screen:

Enter the Department Number:

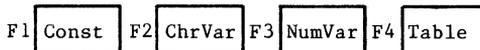
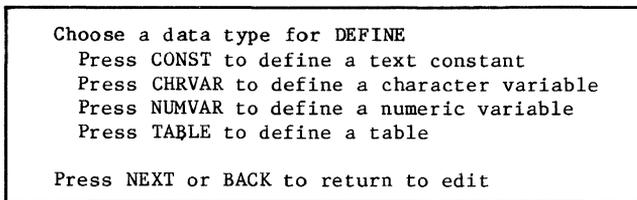
F1	Unmark Mark	F2	Erase Define	F3	Sc1 Draw	F4	Copy Move	F5	Undo	F6	Quit	F7	NoKeys Toggle	F8	Ruler Center
----	----------------	----	-----------------	----	-------------	----	--------------	----	------	----	------	----	------------------	----	-----------------

2. To define inverse video for this field, position the cursor on the first character of the field and press the MARK function key. The character is highlighted.

- Then position the cursor on the last character of the field and press the MARK function key again. The entire field is highlighted.



- Press the DEFINE function key. The Choose Data Type overlay is displayed:



Creating a Screen

5. Press the CONST function key to indicate you are defining a constant text field. The Define Attributes screen for a constant text field is displayed:

```
SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                 Text Constant

Attribute          Value(s)
Name:
Logical highlights:  normal italic title input error message
Physical highlights: normal inverse high low blink underline
Background color:   black blue green magenta red cyan yellow white
Foreground color:   black blue green magenta red cyan yellow white

-----

Type any character next to list choices
Use SYSTEM or REPEAT for defaults
Press FINISH when completed, or CANCEL to cancel

F1 System F2 Repeat F3 Finish F4 Cancel F5  F6  F7  F8 
```

6. Enter a name for the field and any character in the blank space next to inverse which is the attribute you want for this field. For example:

```
SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                 Text Constant

Attribute          Value(s)
Name:
Logical highlights:  normal italic title input error message
Physical highlights: normal Xinverse high low blink underline
Background color:   black blue green magenta red cyan yellow white
Foreground color:   black blue green magenta red cyan yellow white

-----

Type any character next to list choices
Use SYSTEM or REPEAT for defaults
Press FINISH when completed, or CANCEL to cancel

F1 System F2 Repeat F3 Finish F4 Cancel F5  F6  F7  F8 
```


Entering Variables

Numeric and character variables can be single fields or part of a table. A variable must be defined to specify its attributes, such as, the type of data, the input/output mode (whether data can be entered by the user, the program or both), and the maximum number of characters. Optionally, you can also define highlighting and color for a variable.

There are two numeric variables (Department Number and SALARY) and two character variables (NAME and TITLE) on the sample screen.

The following illustrates how the numeric variable Department Number is entered and defined:

1. Position the cursor on the first blank space after the word Number:. Press the MARK function key. The space is highlighted.
2. Position the cursor four spaces to the right of the first highlighted space. Press the MARK function key again. The entire area is highlighted.

The screenshot shows a window titled "Enter the Department Number:" with a shaded input field. Below it is a table with three columns: NAME, TITLE, and SALARY. At the bottom of the window is a toolbar with the following buttons: F1 Unmark Mark, F2 Erase Define, F3 Sc1 Draw, F4 Copy Move, F5 Undo, F6 Quit, F7 NoKeys Toggle, and F8 Ruler Center.

3. Press the DEFINE function key. The Choose Data Type overlay is displayed:

```

Choose a data type for DEFINE
  Press CONST to define a text constant
  Press CHRVAR to define a character variable
  Press NUMVAR to define a numeric variable
  Press TABLE to define a table

Press NEXT or BACK to return to edit
    
```

F1 F2 F3 F4

4. Press the NUMVAR function key to indicate you are defining a numeric variable. The Define Attributes screen for a numeric variable is displayed:

```

-----
SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                Numeric Variable

Attribute          Value(s)
Name:
Variable type:    _integer _real
Logical highlights: _normal _italic _title _input _error _message
Physical highlights: _normal _inverse _high _low _blink _underline
Background color:  _black _blue _green _magenta _red _cyan _yellow _white
Foreground color:  _black _blue _green _magenta _red _cyan _yellow _white
I/O mode:         _input _input/output _output

-----
Fill appropriate blanks
Type any character next to list choices
Use SYSTEM or REPEAT for defaults
Press FINISH when completed, or CANCEL to cancel
Press TABLE, if shown, to see table definition
Press FORMAT, if shown, to specify output format

F1  F2  F3  F4  F5  F6  F7  F8 
    
```

Creating a Screen

- Enter a name for the variable and type any character in the blank spaces next to the attributes you want for this field. For this example the variable is an integer and data can only be input by the application user.

SDF		NOS/VE SCREEN DESIGN FACILITY	
SELECT			
EDIT	DEFINE ATTRIBUTES		
->DEFINE	Numeric Variable		
Attribute	Value(s)		
Name:	<u>DEPT</u>		
Variable type:	<u>X</u> integer real		
Logical highlights:	normal italic title input error message		
Physical highlights:	normal inverse high low blink underline		
Background color:	black blue green magenta red cyan yellow white		
Foreground color:	black blue green magenta red cyan yellow white		
I/O mode:	<u>X</u> input input/output output		
Fill appropriate blanks			
Type any character next to list choices			
Use SYSTEM or REPEAT for defaults			
Press FINISH when completed, or CANCEL to cancel			
Press TABLE, if shown, to see table definition			
Press FORMAT, if shown, to specify output format			
F1	System	F2	Repeat
F3	Finish	F4	Cancel
F5	Table	F6	
F7	Format	F8	

After completing the screen, do one of the following:

- If the screen will be used by a COBOL or CYBIL application program, press the FINISH key. The screen is displayed with an underline highlighting the area that was marked and defined for the variable.

Enter the Department Number: _____			
NAME	TITLE	SALARY	
F1	Unmark Mark	F2	Erase Define
F3	Sci Draw	F4	Copy Move
F5	Undo	F6	Quit
F7	NoKeys Toggle	F8	Ruler Center

- If the screen will be used by a FORTRAN application program, the output format must be specified for numeric variables associated with the screen. You can either enter the output format or apply the defaults supplied by Screen Formatting.

To apply the default output format definitions, press the FINISH key. The defaults are applied and the screen is displayed again with an underline highlighting the area that was marked and defined for the variable.

To enter the output format for the variable, press the FORMAT key. The Define FORTRAN Format screen shown below is displayed:

```

EDIT                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
DEFINE                                DEFINE FORTRAN FORMAT
->FORMAT                               Numeric Variable

Name:                                Maximum width           Integer

Attribute                            Value(s)
Output format type:  E  F  G  I
E,F,G format:      Total width  Digits right of decimal
  Always signed:    Yes  No
  Suppress zero:   Yes  No
  Number of digits:  in the exponent
I format:          Total width  Minimum output digits
  Always signed:   Yes  No
    
```

Choose output format type and fill appropriate blanks
 Type any character next to list choices
 Press FINISH when completed, or CANCEL to cancel

F1 F2 F3 Finish F4 Cancel F5 F6 F7 F8

The screen is used to specify the output format for either a real variable in the E, F, or G format, or an integer variable in the I format. The items shown on the screen are described in this section under Defining the FORTRAN Output Format.

After completing the screen, press the FINISH key. The screen is displayed again.

This ends the example of entering and defining a numeric variable. In the next example, you will see how variables that are part of a table are entered.

Creating a Table

A table, which can only contain variables, can have one occurrence of two or more variables, two or more occurrences of one variable, or many occurrences of many variables. Any variable type (character or integer) can be a member of a table.

A table can have variables that are grouped horizontally or vertically. Placement on the screen is controlled by how you define the individual variables that make up the table.

The occurrences for each variable in the table can only be arranged vertically on the screen. For example:

VARIABLE 1	VARIABLE 2		VARIABLE 3 (Occurrence)
Occurrence	Occurrence	or	VARIABLE 4 (Occurrence)
Occurrence	Occurrence		VARIABLE 3 (Occurrence)
			VARIABLE 4 (Occurrence)
			VARIABLE 3 (Occurrence)
			VARIABLE 4 (Occurrence)

For this example, the variables that make up the table are the NAME, TITLE and SALARY of employees in a specific department. The text constant fields that were entered on the screen are the column headings for the table. You will define the NAME field as a character variable in this example.

To create the table:

1. You will first define as a character variable, the first occurrence of the field NAME (21 character field). To define the field, position the cursor two lines below the column heading, under the N. Press the MARK function key. The blank space is highlighted.
2. Move the cursor 20 spaces to the right of the first highlighted blank space. Press the MARK function key again. The entire area is highlighted. This area represents the first occurrence of the variable NAME.

Enter the Department Number: _____

NAME	TITLE	SALARY

F1 Unmark Mark
F2 Erase Define
F3 Scl Draw
F4 Copy Move
F5 Undo
F6 Quit
F7 NoKeys Toggle
F8 Ruler Center

3. Press the DEFINE function key. The Choose Data Type overlay is displayed:

Choose a data type for DEFINE

Press CONST to define a text constant

Press CHRVAR to define a character variable

Press NUMVAR to define a numeric variable

Press TABLE to define a table

Press NEXT or BACK to return to edit

F1 Const
F2 ChrVar
F3 NumVar
F4 Table

4. Press the CHRVAR function key to indicate you are defining a character variable. The Define Attributes screen for a character variable is displayed:

Creating a Screen

- Enter a name for the variable and type any character in the blank space next to the attributes you want for this field. For this example the following attributes are selected:

```

SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                 Character Variable

Attribute                               Value(s)
Name:                                   NAME
Variable type:                           Xcharacter _textbox
Logical highlights:  _normal _italic _title _input _error _message
Physical highlights: _normal _inverse _high _low _blink _underline
Background color:   _black _blue _green _magenta _red _cyan _yellow _white
Foreground color:   _black _blue _green _magenta _red _cyan _yellow _white
I/O mode:           _input _input/output Xoutput
Upper case mode:   _Yes _No
Maximum characters: 21 (character or textbox)
End of line wrap:  _word _character (textbox only)
-----
Fill appropriate blanks
Type any character next to list choices
Use SYSTEM or REPEAT for defaults
Press FINISH when completed, or CANCEL to cancel
Press TABLE, if shown, to see table definition
F1  F2  F3  F4  F5  F6  F7  F8 
    
```

- Press the FINISH function key. The screen is displayed with an underline highlighting the first occurrence of the variable NAME.

```

Enter the Department Number: _____

NAME                                     TITLE                                     SALARY
_____

F1  F2  F3  F4  F5  F6  F7  F8 
    
```

Repeat this procedure for the first occurrences of the remaining two variables, TITLE (a 10 position character variable) and SALARY (an 8 position numeric variable). When you finish the screen will look like the following:

Enter the Department Number: _____

NAME	TITLE	SALARY

F1 Unmark Mark	F2 Erase Define	F3 Sc1 Draw	F4 Copy Move	F5 Undo	F6 Quit	F7 NoKeys Toggle	F8 Ruler Center
-------------------	--------------------	----------------	-----------------	---------	---------	---------------------	--------------------

Creating a Screen

7. Next you must mark the area the table will occupy. There are two methods available. You can MARK either:
 - a. An area enclosing only the first occurrences of each of the variables to be included in the table. Position the cursor on the first character of the first variable to be included in the table and press the MARK function key. The character is highlighted. Next, position the cursor on the last character of the last variable to be included in the table and press the MARK function key again. All variables included in the marked area are highlighted. For example:

Enter the Department Number: _____

NAME	TITLE	SALARY

F1 Unmark Mark F2 Erase Define F3 Scl Draw F4 Copy Move F5 Undo F6 Quit F7 NoKeys Toggle F8 Ruler Center

With this method, when you access the Define Attributes screen for a table you must specify the number of visible occurrences for the table, and the maximum number of occurrences that can be transferred to the table.

- b. The entire area you want the table to occupy. This area must include the first occurrence of each variable to be included in the table, and must extend vertically under the first occurrences for as many visible occurrences as you want for the table. Position the cursor on the first occurrence of the first variable to be included in the table and press the MARK function key. The entire variable is highlighted. Next, position the cursor on the opposing corner (non-adjacent) from the first highlighted variable and press the MARK function key. The entire boxed area the table will occupy is highlighted. For example:

Enter the Department Number: _____

NAME	TITLE	SALARY
[REDACTED]		

F1 Unmark Mark
F2 Erase Define
F3 Scl Draw
F4 Copy Move
F5 Undo
F6 Quit
F7 NoKeys Toggle
F8 Ruler Center

With this method, the system determines the number of visible occurrences and the maximum number of occurrences the marked area can contain. When you access the Define Attributes screen for a table, you simply press the SYSTEM function key and these values are automatically displayed.

8. Press the DEFINE function key. The Choose Data Type screen is displayed:

Choose a data type for DEFINE

Press CONST to define a text constant

Press CHRVAR to define a character variable

Press NUMVAR to define a numeric variable

Press TABLE to define a table

Press NEXT or BACK to return to edit

F1 Const
F2 ChrVar
F3 NumVar
F4 Table

Creating a Screen

9. Press the TABLE function key to indicate you are defining a table. The Define Attributes screen for a table is displayed:

```
SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                 Table

Attribute                               Value(s)

Name: _____
Visible occurrences: _____
Maximum occurrences: _____

-----
Fill appropriate blanks
Use SYSTEM or REPEAT for defaults
Press DELETE to remove table definition
Press FINISH when completed, or CANCEL to cancel
F1  F2  F3  F4  F5  F6  F7  F8 
```

10. Enter a name for the table. Depending on how you marked the variables, you can either enter the values for visible and maximum occurrences, or press the SYSTEM function key for the system to calculate these values. An example of a completed screen is shown below:

```
SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                 Table

Attribute                               Value(s)

Name: EMPLOYEES
Visible occurrences: 10
Maximum occurrences: 10

-----
Fill appropriate blanks
Use SYSTEM or REPEAT for defaults
Press DELETE to remove table definition
Press FINISH when completed, or CANCEL to cancel
F1  F2  F3  F4  F5  F6  F7  F8 
```

11. Press the FINISH function key. The screen is displayed with an underline shown for each variable occurrence defined for the table.

Enter the Department Number: _____

NAME	TITLE	SALARY
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

F1 Unmark Mark F2 Erase Define F3 Scr Draw F4 Copy Move F5 Undo F6 Quit F7 NoKeys Toggle F8 Ruler Center

Drawing Boxes and Lines

Boxes and lines can be drawn anywhere on a screen. They can be drawn to indicate areas on the screen where data is to be input or output, to frame a screen, indicate the boundaries of a table, or to decorate a screen. You can only define highlighting attributes for a box or line.

The following illustrates how the line dividing the end users input area and the table area is drawn:

1. Position the cursor on a blank space between the areas you want to separate. Press the MARK function key. The space is highlighted.
2. Position the cursor as many spaces as desired to the right of the first highlighted space. Press the DRAW function key. The line is drawn.

Enter the Department Number: _____

NAME	TITLE	SALARY
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

F1 Unmark Mark F2 Erase Define F3 Sc1 Draw F4 Copy Move F5 Undo F6 Quit F7 NoKeys Toggle F8 Ruler Center

- Position the cursor anywhere on the line. Press the MARK function key. The entire line is highlighted.

Enter the Department Number: _____

NAME	TITLE	SALARY

F1 F2 F3 F4 F5 F6 F7 F8

- Press the DEFINE function key. The Define Attributes screen for a box or line is displayed.

SDF NOS/VE SCREEN DESIGN FACILITY
 SELECT
 EDIT
 ->DEFINE DEFINE ATTRIBUTES
 Box or Line

Attribute	Value(s)
Name:	_____
Intensity:	_normal _high _low
Color:	_black _blue _green _magenta _red _cyan _yellow _white
Line width:	_fine _medium _bold

Fill appropriate blanks
 Type any character next to list choices
 Use SYSTEM or REPEAT for defaults
 Press FINISH when completed, or CANCEL to cancel

F1 F2 F3 F4 F5 F6 F7 F8

Creating a Screen

5. Enter any character in the blank space next to the attributes you want for the line. For this example the following attributes are selected:

SDF		NOS/VE SCREEN DESIGN FACILITY	
SELECT			
EDIT		DEFINE ATTRIBUTES	
->DEFINE		Box or Line	
Attribute		Value(s)	
Name:		_____	
Intensity:		<input checked="" type="checkbox"/> normal <input type="checkbox"/> high <input type="checkbox"/> low	
Color:		<input type="checkbox"/> black <input type="checkbox"/> blue <input type="checkbox"/> green <input type="checkbox"/> magenta <input type="checkbox"/> red <input type="checkbox"/> cyan <input type="checkbox"/> yellow <input type="checkbox"/> white	
Line width:		<input type="checkbox"/> fine <input checked="" type="checkbox"/> medium <input type="checkbox"/> bold	
<hr/>			
Fill appropriate blanks			
Type any character next to list choices			
Use SYSTEM or REPEAT for defaults			
Press FINISH when completed, or CANCEL to cancel			
F1	<input type="text"/>	F2	<input type="text"/>
F3	<input type="text"/>	F4	<input type="text"/>
F5	<input type="text"/>	F6	<input type="text"/>
F7	<input type="text"/>	F8	<input type="text"/>

6. Press the FINISH function key. The screen is displayed with a medium width line showing as specified in the definition.

Enter the Department Number: _____

NAME	TITLE	SALARY
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

F1 Unmark Mark
F2 Erase Define
F3 Scl Draw
F4 Copy Move
F5 Undo
F6 Quit
F7 NoKeys Toggle
F8 Ruler Center

This concludes the example of creating a screen. The sequence that was used to create the screen in the example is not the sequence that you have to use when you create screens. SDF allows you to create your screen in any sequence desired.

Editing a Screen (SELECT Function)

The SELECT function displays an existing screen for editing.

The screens that currently reside in your library are listed on the Select screen. If you have more screens than those listed, use the scrolling and paging keys (FWD, BKW, UP and DOWN) to examine all of the screens in your library.

Once you find the desired screen, position the cursor next to the screen name and press the SELECT function key.

The selected screen is displayed with the editing functions represented as function key prompts at the bottom of the screen. The editing functions are described in detail later in this section on the manual.

When you select a screen for editing, it is always displayed at line 1, column 1 with a horizontal and a vertical line indicating the defined width and height of the screen, even if the selected screen is smaller than the terminal display, or defined to be displayed at a location other than line 1 column 1. When you edit the screen, you cannot enter fields outside of the horizontal and vertical lines; the areas outside of these lines are protected.

The selected screen is called the User Edit screen. An example of the screen is shown below:

EMPLOYEE INFORMATION

Name: _____	Birthdate: ___ / ___ / ___
Home address: _____	
City, State: _____	
Zip Code: _____	
Hire date: ___ / ___ / ___	
Job title: _____	Grade: _____
Dept. number: _____	Facility: _____
Division name: _____	
Salary: _____	Exemptions: _____

F1 Unmark
Mark

F2 Erase
Define

F3 Scl
Draw

F4 Copy
Move

F5 Undo

F6 Quit

F7 NoKeys
Toggle

F8 Ruler
Center

If you do not want to edit the selected screen, you can either:

- Press the BACK key; the Select screen is displayed again and you can select another screen or another function.
- Press the QUIT function key to end the SDF session; you are returned to NOS/VE.

If you want to copy a screen, simply select the desired screen, then save it using a different name.

Creating and editing screens is the major activity of an SDF session. When you select a screen for editing, or you choose to create a new screen, the editing functions are represented as function key prompts at the bottom of the screen:

F1	Unmark Mark	F2	Erase Define	F3	Sc1 Draw	F4	Copy Move	F5	Undo	F6	Quit	F7	NoKeys Toggle	F8	Ruler Center
----	----------------	----	-----------------	----	-------------	----	--------------	----	------	----	------	----	------------------	----	-----------------

The functions shown above are the MAIN editing functions. The functions listed on the top line are initiated by pressing the SHIFT key and the function key indicated.

The TOGGLE function displays SECONDARY editing functions.

F1	Save	F2	Events	F3	Sc1 Show	F4	Attrib	F5		F6	Quit	F7	Toggle	F8	SeeDef
----	------	----	--------	----	-------------	----	--------	----	--	----	------	----	--------	----	--------

Pressing the TOGGLE function key toggles between the Main and Secondary editing functions. To use an editing function, the function key prompt must be displayed at the bottom of the screen.

Editing a Screen

The editing functions are briefly described below. Detailed descriptions are provided later in this section.

ATTRIB	Defines dynamic attributes for the entire screen.
CENTER	Centers a field horizontally on the screen.
COPY	Copies a field from one location to another on the screen.
DEFINE	Defines attributes for fields on a screen.
DRAW	Draws a line or box.
ERASE	Erases a field.
EVENTS	Defines function keys for a screen you are creating.
MARK	Marks a field for using an editing function
MOVE	Moves a field from one location to another.
NOKEYS	Turns off the display of function key prompts.
QUIT	Ends an SDF session.
RULER	Displays character and line positions for items on a screen.
SAVE	Saves a screen.
SEEDF	Displays the screen profile and the defined dynamic attributes.
SCL	Enables user to enter an SCL command.
SHOW	Displays the screen you are creating or editing.
TOGGLE	Toggles between the Main and Secondary editing functions.
UNDO	Cancel an editing change.
UNMARK	Unmarks a marked field on a screen.

NOTE

The exact placement of function key prompts is dependent on the terminal model you are using. All examples in this manual are of the CDC 721 terminal.

Many of the editing functions require that you first use the MARK function to mark the area to be edited. After marking the area, press the appropriate function key for the function you want to perform. For example:

- A field is moved, copied, centered, erased and defined by marking the area with the MARK function key, and then pressing the appropriate function key for the function you want to perform.

- To change or delete a field, MARK the area, then press the ERASE function key. You can then type new information in the same area and redefine the field.
- To define attributes for a field, MARK the field, then press the DEFINE function key. You are prompted to indicate the type of data you want to define (constant text, variable, or table). After responding, a Define Attributes screen for the specified data type is presented. You specify the attributes for the field on this screen.

After you finish editing the screen, you can use the secondary editing function SAVE to save the screen in your library.

Example of Editing a Screen

Using the sample screen shown below, this example will illustrate how to:

1. DELETE the field Division Name.
2. MOVE the field Exemptions up one line on the screen.

EMPLOYEE INFORMATION

Name: _____ Birthdate: ____ / ____ / ____

Home address: _____

City, State: _____

Zip Code: _____

Hire date: ____ / ____ / ____

Job title: _____ Grade: _____

Dept. number: _____ Facility: _____

Division name: _____

Salary: _____ Exemptions: _____

F1 Unmark Mark

F2 Erase Define

F3 Sc1 Draw

F4 Copy Move

F5 Undo

F6 Quit

F7 NoKeys Toggle

F8 Ruler Center

To delete the field Division Name:

1. Position the cursor on the first character of the field to be deleted (in this case the D). Press the MARK function key. The D is highlighted.

Editing a Screen

2. Position the cursor on the last character of the field (in this case at the end of the solid line). Press the MARK function key. The entire field is highlighted.

EMPLOYEE INFORMATION

Name: _____ Birthdate: ____ / ____ / ____
Home address: _____
City, State: _____
Zip Code: _____

Hire date: ____ / ____ / ____
Job title: _____ Grade: _____
Dept. number: _____ Facility: _____
Division name: _____

Salary: _____ Exemptions: _____

F1	Unmark Mark	F2	Erase Define	F3	Scr Draw	F4	Copy Move	F5	Undo	F6	Quit	F7	NoKeys Toggle	F8	Ruler Center
----	----------------	----	-----------------	----	-------------	----	--------------	----	------	----	------	----	------------------	----	-----------------

3. Press the ERASE function key. The field and all of its attributes are deleted as shown below.

EMPLOYEE INFORMATION

Name: _____ Birthdate: ____ / ____ / ____
Home address: _____
City, State: _____
Zip Code: _____

Hire date: ____ / ____ / ____
Job title: _____ Grade: _____
Dept. number: _____ Facility: _____

Salary: _____ Exemptions: _____

F1	Unmark Mark	F2	Erase Define	F3	Scr Draw	F4	Copy Move	F5	Undo	F6	Quit	F7	NoKeys Toggle	F8	Ruler Center
----	----------------	----	-----------------	----	-------------	----	--------------	----	------	----	------	----	------------------	----	-----------------

To move the field Exemptions up one line:

1. Position the cursor on the first character of the field to be moved (in this case the E). Press the MARK function key. The E is highlighted.
2. Position the cursor on the last character of the field (in this case at the end of the solid line). Press the MARK function key. The entire field is highlighted.

EMPLOYEE INFORMATION

Name: _____ Birthdate: ____ / ____ / ____

Home address: _____

City, State: _____

Zip Code: _____

Hire date: ____ / ____ / ____

Job title: _____

Dept. number: _____

Grade: _____

Facility: _____

Salary: _____ Exemptions: _____

F1 Unmark Mark

F2 Erase Define

F3 Sc1 Draw

F4 Copy Move

F5 Undo

F6 Quit

F7 NoKeys Toggle

F8 Ruler Center

Copying a Screen

3. Position the cursor at the beginning of the area where you want the field to be moved. Press the MOVE function key. The field is moved to the area where the cursor is positioned.

EMPLOYEE INFORMATION

Name: _____ Birthdate: ____/____/____
Home address: _____
City, State: _____
Zip Code: _____

Hire date: ____/____/____
Job title: _____ Grade: _____
Dept. number: _____ Facility: _____

Salary: _____ Exemptions: _____

F1	Unmark Mark	F2	Erase Define	F3	Sc1 Draw	F4	Copy Move	F5	Undo	F6	Quit	F7	NoKeys Toggle	F8	Ruler Center
----	----------------	----	-----------------	----	-------------	----	--------------	----	------	----	------	----	------------------	----	-----------------

Copying a Screen (SELECT Function)

To copy a screen:

1. Position the cursor next to the screen name on the Select screen and press the SELECT function key.
2. When the screen is displayed, press the SAVE function key. The following overlay is displayed:

Press NEXT to replace existing screen.
Enter unique name, press NEXT to save new screen.
Press BACK to discard screen, QUIT to exit SDF.

Record definition output will be produced in
_cobol _ansi fortran _cdc fortran _cybil

3. On the line, enter a different name for the screen. The screen will be copied and saved in your library under the new name.

4. The line at the bottom of the overlay is provided for indicating the programming languages for which you want a record definition generated for the screen. The language already checked is the language specified for the existing screen. You can specify as many of the languages listed by entering any character next to your choices. There will be one SCU deck generated for each language selected. If no languages are selected, no record definitions will be generated.

Displaying a Screen (SHOW Function)

The SHOW function on the Select screen displays an existing screen.

To display a screen, position the cursor next to the desired screen on the screen list and press the SHOW function key. The selected screen is displayed.

The screen is displayed as it will appear to the end user, with all of the defined highlighting and attributes in effect.

To clear the screen from the display and return to the SELECT screen:

Press the NEXT key (RETURN or NEW LINE on some terminals) or the BACK key. No other function keys are operational.

Cancelling a Previous Delete Function (UNDO Function)

The UNDO function on the SELECT screen cancels the last DELETE function you initiated (the DELETE function deletes a screen). Only the last DELETE function is cancelled.

When you delete a screen, the screen name is removed from the list of screens displayed on the Select screen.

If you decide that you do not want the screen deleted, press the UNDO function key; the screen name reappears in the list of screens.

The UNDO function must be initiated before the next SELECT or CREATE function is initiated.

Deleting a Screen (DELETE Function)

The DELETE function on the Select screen deletes a screen from the list of screens on the Select screen.

To delete a screen, position the cursor next to the name of the screen and press the DELETE function key. The screen name is removed from the list of screens.

If you decide that you do not want the screen deleted, press the UNDO function key to cancel the DELETE function.

Ending an SDF Session (QUIT Function)

The QUIT function ends an SDF session and returns you to NOS/VE.

If you press the QUIT function key from the Banner screen, or from the Select screen, you are immediately returned to NOS/VE.

If you press QUIT after using an editing function on a new or existing screen and you have not used the SAVE function, SDF offers you a chance to save the screen by overlaying the screen with the following message:

```
Press NEXT to replace existing screen.  
Enter unique name, press NEXT to save new screen.  
Press BACK to discard screen, QUIT to exit SDF.
```

```
Record definition output will be produced in  
_cobol _ansi fortran _cdc fortran _cybil
```

Press the NEXT key to replace an existing screen to which you have made changes. Enter a unique name and press NEXT to save a new screen, press the BACK key to discard the screen, or press QUIT to exit SDF (the screen will also be discarded).

The line at the bottom of the overlay is provided for indicating the programming languages for which you want a record definition generated for the screen. The language checked is the language specified when you defined the screen profile. You can enter any character next to as many of the languages as desired. There will be one SCU deck generated for each language selected. If no languages are selected, no record definitions will be generated.

If you press QUIT and you have not used an editing function, the message is not displayed; the session is ended and the entries are discarded.

Changing the Screen Profile (PROFIL Function)

The PROFIL function is used to display and change the characteristics defined for a screen. You can change any of the items that are on the screen: the programming language the application is written in, color attributes, thickness of the screen border, screen width and height and the position the screen will occupy on the end users terminal.

To access the Define Screen Profile screen:

1. Access the Select screen. Position the cursor next to the name of the screen for which you want to change the profile.
2. Press the PROFIL function key.

The Define Screen Profile screen shown below is displayed:

```

SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT                                DEFINE SCREEN PROFILE
->PROFIL

Attribute                               Value(s)

Programming Language:  _cobol _ansi fortran _CDC fortran _cybil
Background color:     _black _blue _green _magenta _red _cyan _yellow _white
Foreground color:     _black _blue _green _magenta _red _cyan _yellow _white
Screen border:        _fine _medium _bold _none
Screen width:
Screen height:
x-origin:
y-origin:

-----
Fill appropriate blanks
Type any character next to list choices
Use SYSTEM or REPEAT for defaults
Press FINISH when completed, or CANCEL to cancel

F1  F2  F3  F4  F5  F6  F7  F8 

```

To change items on the Define Screen Profile screen, use the space bar to blank out the existing selection and enter any character next to your choice, or type over the existing values. If you do not want to enter values, you can:

Use the SYSTEM function to apply the default screen characteristics to items on the screen.

Use the REPEAT function to apply the same characteristics that you specified for the previous screen you defined.

Use the FINISH function when you have completed your entries.

Use the CANCEL function to cancel the definitions for the screen. You are returned to the Select screen.

The items on the Define Screen Profile screen are described next.

PROGRAMMING LANGUAGE: _COBOL _ANSI FORTRAN _CDC FORTRAN _CYBIL (OPTIONAL)

Specify the programming language used for the application that accesses this screen. The default is Cobol. When you save the screen, SDF creates a source program record description in that language, and writes it to the file specified by the SOURCE parameter on the DESS command when you accessed SDF. The record description describes the data fields on the screen. The record description can be inserted in the application program for compilation as part of the program.

Changing the Screen Profile

BACKGROUND COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE

Specify the color of the screen behind the lines and characters on the screen. Selected areas of the screen can have a different background color, if specific color attributes are specified for certain screen areas.

FOREGROUND COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE

Specify the color of the lines and characters displayed on the screen. Selected areas of the screen can have a different foreground color, if specific color attributes are specified for certain screen areas.

SCREEN BORDER: FINE MEDIUM BOLD NONE

Specify the thickness of the lines that make up the border of the screen if a border is desired. The size of the border is determined by the values entered for screen height, width, x-origin and y-origin on this screen. When you define a border, you cannot design the the screen outside of that perimeter. Note that the border does not appear unless the SHOW function is used to look at the screen.

SCREEN WIDTH: _____ (OPTIONAL)

Enter the width of the screen, in columns. The maximum width is the width of the terminal you are using and is the default. The minimum width is 1 column.

SCREEN HEIGHT: _____ (OPTIONAL)

Enter the height of the screen, in lines. The maximum height is the height of the screen you are using and is the default. The minimum height is 1 line.

X-ORIGIN: _____ (OPTIONAL)

Enter the column on the end users terminal display that will be the left edge of the screen when displayed. The default is column 1.

Y-ORIGIN: _____ (OPTIONAL)

The line number, on the end users terminal display, that will be the top line of the screen when displayed. The default is line 1.

If you want the size of the screen to adjust automatically to the size of any terminal on which the application is processed, leave screen height, width, x-origin and y-origin blank. The screen size will be variable and will adjust automatically according to terminal type.

When values are entered for screen height, width, x-origin and y-origin, the screen size is set to the size specified. When the defaults are used for these definitions, the screen size is set to the size of the terminal you are using. In either case, the screen size will not adjust automatically to different terminal types.

When you complete all of the entries on the Define Screen Profile screen, press the FINISH key. The Select screen is displayed again. You can select another function.

Main Editing Functions

Centering a Field (CENTER Function)

The CENTER function moves a field and relocates it, horizontally, to the center of the width of the screen.

The initial position of the area to be centered can be anywhere on the screen, to the left or right of the center.

The marked area can include any type of field, including free text.

To center a field:

1. MARK the field to be centered. Refer to the MARK function described in this section of the manual.
2. Press the CENTER function key. The marked field is moved to the center of the screen.

Copying a Field (COPY Function)

The COPY function copies a field to another location on the screen.

If you attempt to copy a field into an occupied area, SDF issues an error message and allows you to retry at a different location, or you can use the ERASE function to erase the conflicting fields at the copy destination, and then use COPY again.

If the area to be copied contains variables, they must be redefined at the new location. Also, the variable names must be changed to avoid duplicate name conflicts. Any such conflicts cause an error message when you try to SAVE the screen.

To copy a field:

1. MARK the field to be copied. Refer to the MARK function described in this section of the manual.
2. Position the cursor at the upper left corner of where you want the marked field to appear.
3. Press the COPY function key. The marked field is copied to the location where the cursor is positioned.

Marked areas are remembered until UNMARKed or another MARK function is initiated. This enables multiple copies of the same area simply by repositioning the cursor for each COPY function.

Defining Attributes (DEFINE Function)

The DEFINE function is used to define attributes for a field. You can also view and/or change attributes that are already defined.

The attributes are associated with how the field is to appear on the screen, such as highlighting, or they describe qualities of the data associated with the field, such as data type, maximum characters or input/output mode.

Defining a New Field

1. MARK the area to be defined. The marked area must not split fields. Refer to the MARK function described later in this section.
2. Press the DEFINE function key. SDF displays the following Choose Data Type overlay.

```
Choose a data type for DEFINE
  Press CONST to define a text constant
  Press CHRVAR to define a character variable
  Press NUMVAR to define a numeric variable
  Press TABLE to define a table

Press NEXT or BACK to return to edit
```

F1 Const F2 ChrVar F3 NumVar F4 Table

3. Specify the type of field (constant text, character variable, numeric variable or table) you are defining by pressing the appropriate function key as indicated at the bottom of the overlay.
4. A Define Attributes screen is presented. Depending on the type of field (constant text, character variable, numeric variable, table, or box and line) you are defining, a different Define Attributes screen is presented.

An example of the Define Attributes screen for a constant text field is shown below:

```

SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                 Text Constant

Attribute                               Value(s)
Name:
Logical highlights:  _normal _italic _title _input _error _message
Physical highlights: _normal _inverse _high _low _blink _underline
Background color:   _black _blue _green _magenta _red _cyan _yellow _white
Foreground color:   _black _blue _green _magenta _red _cyan _yellow _white

Type any character next to list choices
Use SYSTEM or REPEAT for defaults
Press FINISH when completed, or CANCEL to cancel

F1  System F2  Repeat F3  Finish F4  Cancel F5  F6  F7  F8 
    
```

The attribute lines are blank. To specify the desired attributes for the field, type any character in the blank space next to your choice. For example, the following shows inverse specified for the physical highlights of a field.

Physical highlights: _normal inverse _high _low _blink _underline

To specify the system default attributes, press the SYSTEM function key.

If the attributes for the current field are to be the same as those specified for the previous field, pressing the REPEAT function key automatically applies the attributes specified for the previous field to the current field.

NOTE

When defining a variable field, you must complete all of the required attributes on the Define Attributes screen. The system does not check for incompleting items; thus errors can occur.

Viewing or Changing Attributes

1. MARK and press the DEFINE function key for a field that is already defined; the appropriate Define Attributes screen is presented, showing the attributes that are already defined for the field.

Defining Attributes

2. To change existing attributes, move the cursor to the existing selection and press the space bar; the existing selection is deleted. You can then type any character in the blank space next to your new selection.

To change the data type of the field, press the CANCEL function key or the BACK key to return to the User Edit screen. The field must be erased, reentered, and then redefined as a different data type.

Functions on Define Screens

The functions that are available on Define Attributes screens are described below. Some of these functions are also available on the Define Function Keys screen and the Define Screen Profile screen, both of which are available as secondary editing functions. The descriptions here apply to all of the Define screens.

SYSTEM Function

The SYSTEM function indicates that you want the system default attributes to be applied to the field.

When the SYSTEM function key is pressed, the system default attributes appear in the attribute lines that have not been filled in.

At any time before you press the FINISH key, you can change these attributes by typing new selections, or by using the REPEAT function to indicate that the attributes defined for the previous field are to be applied to the current field.

REPEAT Function

The REPEAT function enables you to apply attributes entered for the previous field to the field you are currently defining. This is only effective if both the previous and the current field are the same data type (constant text, character variable, numeric variable, table, or box and line).

When all or part of the attributes for the current field are not filled in, pressing the REPEAT function key causes the attributes entered for the previous field to appear in the empty spaces.

At any time before you press the FINISH key, you can change these attributes by typing new selections, or by using the SYSTEM function to indicate that system defaults are to be used.

FINISH Function

The FINISH function indicates that you have finished entering the attributes for the field.

When you complete specifying the selected attributes for the field, and you are satisfied with your selections, press the FINISH function key. The attributes you have defined are saved for the field.

CANCEL Function

The CANCEL function cancels a DEFINE function and returns you to the User Edit screen. Any attributes you have defined are also cancelled.

To cancel, press the CANCEL function key. Using the BACK key, if your terminal has one, accomplishes the same function as CANCEL; however, BACK returns you to the previous screen listed in the context block.

DELETE Function

The DELETE function appears on the Define Attributes screen for a table, and on the Define Function Keys screen (displayed when you use the secondary editing function, EVENTS).

On the Define Attributes screen for a table, DELETE is used to delete the table definition for a defined field. To delete the table definition, press the DELETE function key.

On the Define Function Keys screen, DELETE is used to delete a function key definition. Position the cursor on the function key definition you want to delete, and press the DELETE function key.

TABLE Function

The TABLE function only appears on the Define Attributes screen for a character variable or numeric variable. It only appears when a variable field that has been defined as a table occurrence is MARKed, and the DEFINE function key is pressed.

The TABLE function enables you to view the table definition.

To view a table definition, press the TABLE function key.

FORMAT Function

The FORMAT function only appears on the Define Attributes screen for a numeric variable.

After completing the Define Attributes screen for a numeric variable, pressing the FORMAT function key displays the Define FORTRAN Format screen. The Define FORTRAN Format screen is used to specify the output format for the variable. The screen will have two sections, one for an integer variable and one for a real variable.

The Define FORTRAN Format screen is shown later in this section.

Things to Know About Highlighting

On most Define Attributes screens there are lines for specifying whether you want logical or physical highlighting:

Logical highlights: normal_italic_title_input_error_message
Physical highlights: normal_inverse_high_low_blink_underline

When you are defining attributes, only one of these lines should be filled in. It is important that you understand the difference between these two highlighting styles.

Logical Versus Physical Highlights

Logical highlights enable you to define physical highlighting styles without regard for the different types of terminals that will display the screen. Only one logical highlight may be specified.

Each NOS/VE site can predefine, in the Terminal Definition Utility (TDU) up to six logical highlighting styles for each terminal type in use at the site.

In the TDU these highlights have the logical names of normal, italic, title, input, error and message. The physical highlights actually displayed are controlled by how these names are defined in the TDU.

For example, italic may be defined as inverse video in the TDU for one terminal type. For a terminal that cannot display inverse video, italic can be defined as underline. The effect is that, regardless of the terminal type, some form of highlighting can be applied. When defining logical highlights, you should be aware of the definitions in the TDU.

When you specify logical highlights, screen definitions do not ever need to change to be usable on different terminals. The association of a logical highlight to an actual highlight can change simply by creating a new terminal definition in the TDU.

Physical Versus Logical Highlights

Physical highlights display highlights that correspond to the names, normal, inverse, high, low, blink and underline, and are only effective on a terminal that is capable of displaying the specific highlight. If a specific highlight is not possible for a given terminal, it may be replaced by another, or not highlighted when that terminal is used.

More than one physical highlight may be specified, such as, inverse video and blink can be specified.

If your application will be used on a single terminal type, physical highlights give you absolute control over highlighting styles, and thus, allow you to define, in detail, the visual effects for the screens displayed by your application.

Defining Color for a Field

On most Define Attributes screens there are lines for specifying that you want color applied to a field:

```
Background Color:  _black_blue_green_magenta_red_cyan_yellow_white
Foreground Color:  _black_blue_green_magenta_red_cyan_yellow_white
```

BACKGROUND COLOR is the color behind the displayed characters or graphics.

FOREGROUND COLOR is the color of the characters and lines displayed.

When you define color attributes, the selected color will only be displayed on terminals capable of displaying color. If the terminal which displays your screen is not color-capable, the color attribute is ineffective.

Defining Attributes for Constant Text

The Define Attributes screen for constant text is presented for defining, viewing or changing the attributes of a constant text field.

Constant text fields are character strings of descriptive text used for such purposes as titles, column headings, instructions, or menus on screens you are creating.

Constant text fields do not have to be defined unless you want to apply display characteristics such as highlighting and color.

To access the screen to define a new field:

1. MARK the area to be defined.
2. Press the DEFINE function key.
3. When the Choose Data Type overlay is displayed, press the CONST function key.

To access the screen to view or change existing definitions:

1. MARK a field that is already defined.
2. Press the DEFINE function key.

To exit the screen, you can either:

- Press the FINISH key to signal completion of defining attributes. You are returned to the User Edit screen. Any defined highlights are activated and displayed on the screen.
- Press the CANCEL key; the DEFINE function is cancelled and you are returned to the User Edit screen.

Defining Attributes for Constant Text

The Define Attributes screen for constant text is shown below:

```

SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                 Text Constant

Attribute                               Value(s)
Name:
Logical highlights:  _normal _italic _title _input _error _message
Physical highlights: _normal _inverse _high _low _blink _underline
Background color:   _black _blue _green _magenta _red _cyan _yellow _white
Foreground color:   _black _blue _green _magenta _red _cyan _yellow _white

-----

Type any character next to list choices
Use SYSTEM or REPEAT for defaults
Press FINISH when completed, or CANCEL to cancel

F1  System F2  Repeat F3  Finish F4  Cancel F5  F6  F7  F8 

```

The attributes are described below:

NAME: _____ (OPTIONAL)

Enter a name to be assigned to this constant text field. The name must comply with the naming conventions of the programming language used for the application.

LOGICAL HIGHLIGHTS: N I T I I E M (OPTIONAL)

If you use logical highlights, leave physical highlights blank. You may only specify one logical highlight.

Logical highlights enable you to define physical highlighting styles without regard for the types of terminals that will display the screen.

Each NOS/VE site can predefine, in the Terminal Definition Utility (TDU) up to six logical highlighting styles for each terminal type in use at the site. In the TDU these highlights have the logical names of normal, italic, title, input, error and message. The physical highlights actually displayed are controlled by how these names are defined in the TDU.

For example, italic may be defined as inverse video in the TDU for one terminal type. For a terminal that cannot display inverse video, italic may be defined as underline. The effect is that, regardless of terminal type, some form of highlighting can be applied. When defining logical highlights, you should be aware of the definitions in the TDU.

When you specify logical highlights, screen definitions do not ever need to change to be usable on different terminals. The association of a logical highlight to an actual highlight can change simply by creating a new terminal definition in the TDU.

PHYSICAL HIGHLIGHTS: NORMAL INVERSE HIGH LOW BLINK UNDERLINE (OPTIONAL)

If you use physical highlights, leave logical highlights blank. You can specify more than one physical highlight.

Physical highlights display highlights that correspond to the names, normal, inverse, high, low, blink and underline, and are only effective on a terminal that is capable of displaying the specific highlight. If a specific highlight is not possible for a given terminal, it may be replaced by another, or not highlighted when that terminal is used.

If your application will be used on a single terminal type, physical highlights give you absolute control over highlighting styles, and thus, allow you to define, in detail, the visual effects for the screens displayed by your application.

**BACKGROUND COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE
FOREGROUND COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE (OPTIONAL)**

Background color is the color behind the displayed characters or graphics.

Foreground color is the color of the characters and lines displayed.

When you define color attributes, the selected color is only displayed on terminals capable of displaying color. If the terminal which displays your screen is not color-capable, the color attribute is ineffective.

Defining Attributes for a Character Variable

The Define Attributes screen for a character variable is presented for defining, viewing, or changing the attributes of a character variable.

A variable is any character or numeric data whose value can be changed by the user, a program or both when the screen is displayed by the application program. Examples of using variables are: displaying the current date on a screen; display of report data by the application program; and data entry by the user. There are two types of character variables:

Character String - A string of characters less than one line in length.

Text Box - Multiple lines of the same length which contain wraparound character text.

Attributes can be defined to specify the variable type, maximum characters, input/output mode, end of line wrap and highlighting.

To access the screen to define a character variable:

1. MARK the area to be defined.
2. Press the DEFINE function key.
3. When the Choose Data Type overlay is displayed, press the CHRVAR function key.

To access the screen to view or change existing definitions:

1. MARK a field that is already defined.
2. Press the DEFINE function key.

To exit the screen, you can either:

- Press the FINISH key to signal completion of defining attributes. You are returned to the User Edit screen.

Any defined highlights are activated and displayed on the screen. If no highlights were defined, defined variables are temporarily highlighted by SDF.

- Press the CANCEL key; the DEFINE function is cancelled and you are returned to the User Edit screen.

Defining Attributes for a Character Variable

The Define Attributes screen for a variable is shown below:

SDF	NOS/VE SCREEN DESIGN FACILITY
SELECT	
EDIT	DEFINE ATTRIBUTES
->DEFINE	Character Variable

Attribute	Value(s)
Name:	_____
Variable type:	<u>character</u> <u>textbox</u>
Logical highlights:	<u>normal</u> <u>italic</u> <u>title</u> <u>input</u> <u>error</u> <u>message</u>
Physical highlights:	<u>normal</u> <u>inverse</u> <u>high</u> <u>low</u> <u>blink</u> <u>underline</u>
Background color:	<u>black</u> <u>blue</u> <u>green</u> <u>magenta</u> <u>red</u> <u>cyan</u> <u>yellow</u> <u>white</u>
Foreground color:	<u>black</u> <u>blue</u> <u>green</u> <u>magenta</u> <u>red</u> <u>cyan</u> <u>yellow</u> <u>white</u>
I/O mode:	<u>input</u> <u>input/output</u> <u>output</u>
Upper case mode:	<u>Yes</u> <u>No</u>
Maximum characters:	_____ (character or textbox)
End of line wrap:	<u>word</u> <u>character</u> (textbox only)

Fill appropriate blanks
 Type any character next to list choices
 Use SYSTEM or REPEAT for defaults
 Press FINISH when completed, or CANCEL to cancel
 Press TABLE, if shown, to see table definition

F1 F2 F3 F4 F5 F6 F7 F8

The attributes are described below.

NAME: _____ (REQUIRED)

Enter a name to be assigned to this variable. The name must be unique to this screen and comply with the naming conventions of the application programming language. The variable name is referenced by the application program to manipulate the data associated with the variable.

VARIABLE TYPE: CHARACTER INTEGER REAL TEXTBOX (REQUIRED)

Specify the type of character variable. The types are:

- Character String - The default. A string of characters less than one line in length.
- Text Box - Multiple lines of the same length which contain wraparound character text.

LOGICAL HIGHLIGHTS: NORMAL ITALIC TITLE INPUT ERROR MESSAGE (OPTIONAL)

If you use logical highlights, leave physical highlights blank. You may only specify one logical highlight.

Logical highlights enable you to define physical highlighting styles without regard for the types of terminals that will display the screen.

Each NOS/VE site can predefine, in the Terminal Definition Utility (TDU) up to six logical highlighting styles for each terminal type in use at the site. In the TDU these highlights have the logical names of normal, italic, title, input, error and message. The physical highlights actually displayed are controlled by how these names are defined in the TDU.

For example, italic may be defined as inverse video in the TDU for one terminal type. For a terminal that cannot display inverse video, italic may be defined as underline. The effect is that, regardless of terminal type, some form of highlighting can be applied. When defining logical highlights, you should be aware of the definitions in the TDU.

When you specify logical highlights, screen definitions do not ever need to change to be usable on different terminals. The association of a logical highlight to an actual highlight can change simply by creating a new terminal definition in the TDU.

PHYSICAL HIGHLIGHTS: NORMAL INVERSE HIGH LOW BLINK UNDERLINE (OPTIONAL)

If you use physical highlights, leave logical highlights blank. You may specify more than one physical highlight.

Physical highlights display highlights that correspond to the names, normal, inverse, high, low, blink and underline, and are only effective on a terminal that is capable of displaying the specific highlight. If a specific highlight is not possible for a given terminal, it may be replaced by another, or not highlighted when that terminal is used.

If your application will be used on a single terminal type, physical highlights give you absolute control over highlighting styles, and thus, allow you to define, in detail, the visual effects for the screens displayed by your application.

BACKGROUND COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE
FOREGROUND COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE (OPTIONAL)

Background color is the color behind the displayed characters or graphics.

Foreground color is the color of the characters and lines displayed.

When you define color attributes, the selected color is only displayed on terminals capable of displaying color. If the terminal which displays your screen is not color-capable, the color attribute is ineffective.

I/O MODE: INPUT INPUT/OUTPUT OUTPUT

(REQUIRED)

Specify how data can be input or output for this variable.

The Input/Output modes are:

- Input - Data for the variable can only be entered by the end user. The data is not displayed.
- Input/output - The default. Data for the variable can be entered or changed by the user, and can also be changed by the program. The data is displayed.
- Output - Data for the variable can only be changed by the program. The data is displayed and the field is protected.

UPPERCASE MODE: Yes No

(REQUIRED)

When uppercase mode is selected, any text that is entered by the application user is converted to upper case before it is processed by the application program. Select one of the following:

- Yes - Text is converted to uppercase.
- No - Text is not converted to uppercase.

MAXIMUM CHARACTERS: (character or textbox)

(OPTIONAL)

Specify the maximum number of characters for the variable. This number must be at least the size of the area on the screen that the variable occupies. However, the number can be larger than the size of the area defined on the screen for the variable, in which case, the screen user must use scrolling to see all of the data.

END OF LINE WRAP: WORD CHARACTER (textbox only)

(OPTIONAL)

Applies to variable data that is displayed within a boxed area. This is called a textbox. This attribute is ignored for all other variable types.

You must specify what action is to be taken when data sent to the variable reaches the right boundary of a line within the textbox. You can specify whether the data should wraparound to the next line on a word, or on a character. The choices are:

- Word - When output text is sent to a line in a textbox, the system determines whether the next string of non-blank characters will be split at the end of the line. If so, the system searches backward to find the previous blank character, ends the line at the blank character and then sends the string of non-blank characters to the next line. Words will not be split when word wrap is specified. If using word wrap, the variable must be large enough to contain the longest word that will be displayed.

Defining Attributes for a Numeric Variable

Character - When output text is sent to a line in a textbox, the line is filled with exactly the number of characters it can hold. The next line is started with the next character of text. Words can be split when character wrap is specified.

Defining Attributes for a Numeric Variable

The Define Attributes screen for a numeric variable is presented for defining, changing or viewing the attributes for a numeric variable.

If the variable is on a screen that will be used by a FORTRAN application, you can also define the output format for the variable. Another screen called the Define FORTRAN Format screen is provided for defining the FORTRAN output format definition.

A variable is any character or numeric data whose value can be changed by the user, a program or both. There are two types of numeric variables:

Integer - A whole number within defined value limits.

Real - A real (floating point) number for computational use.

Attributes can be defined for a numeric variable to specify the variable type, display characteristics, and input/output mode. The output format definition includes the format type, whether the field will be signed, whether zeroes are to be suppressed and the number of digits.

To define a numeric variable:

1. MARK the area to be defined as a numeric variable.
2. Press the DEFINE function key.
3. When the Choose Data Type overlay is displayed, press the NUMVAR function key. The Define Attributes screen is displayed.

After completing the screen, do one of the following:

1. If the screen will be used by a COBOL or CYBIL application program, press the FINISH key. The screen is displayed again with an underline highlighting the area that was marked and defined for the variable.
2. If the screen will be used by a FORTRAN application program, the output format must be specified for numeric variables associated with the screen. You can either enter the output format or apply the defaults supplied by Screen Formatting.

To apply the default output format definitions, press the FINISH key. The defaults are applied and the screen is displayed again with an underline highlighting the area that was marked and defined for the variable.

To enter the output format for the variable, press the FORMAT key. The Define FORTRAN Format screen is displayed.

To view or change existing definitions:

1. Mark a field that is already defined as a numeric variable.
2. Press the DEFINE function key. The Define Attributes screen is displayed with the existing definitions shown.

To exit the screen, you can either:

- Press the FINISH key to signal completion of defining attributes. You are returned to the User Edit screen. Any defined highlights are activated and displayed on the screen.
- Press the CANCEL key; the DEFINE function is cancelled and you are returned to the User Edit screen.
- Press the FORMAT function key.

The Define Attributes screen for a numeric variable is shown below:

SDF SELECT EDIT ->DEFINE	NOS/VE SCREEN DESIGN FACILITY DEFINE ATTRIBUTES Numeric Variable																
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Attribute</th> <th style="text-align: left;">Value(s)</th> </tr> </thead> <tbody> <tr> <td>Name:</td> <td>_____</td> </tr> <tr> <td>Variable type:</td> <td>__integer__real</td> </tr> <tr> <td>Logical highlights:</td> <td>__normal__italic__title__input__error__message</td> </tr> <tr> <td>Physical highlights:</td> <td>__normal__inverse__high__low__blink__underline</td> </tr> <tr> <td>Background color:</td> <td>__black__blue__green__magenta__red__cyan__yellow__white</td> </tr> <tr> <td>Foreground color:</td> <td>__black__blue__green__magenta__red__cyan__yellow__white</td> </tr> <tr> <td>I/O mode:</td> <td>__input__input/output__output</td> </tr> </tbody> </table>		Attribute	Value(s)	Name:	_____	Variable type:	__integer__real	Logical highlights:	__normal__italic__title__input__error__message	Physical highlights:	__normal__inverse__high__low__blink__underline	Background color:	__black__blue__green__magenta__red__cyan__yellow__white	Foreground color:	__black__blue__green__magenta__red__cyan__yellow__white	I/O mode:	__input__input/output__output
Attribute	Value(s)																
Name:	_____																
Variable type:	__integer__real																
Logical highlights:	__normal__italic__title__input__error__message																
Physical highlights:	__normal__inverse__high__low__blink__underline																
Background color:	__black__blue__green__magenta__red__cyan__yellow__white																
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I/O mode:	__input__input/output__output																
Fill appropriate blanks Type any character next to list choices Use SYSTEM or REPEAT for defaults Press FINISH when completed, or CANCEL to cancel Press TABLE, if shown, to see table definition Press FORMAT, if shown, to specify output format																	
F1 <input type="text"/> System F2 <input type="text"/> Repeat F3 <input type="text"/> Finish F4 <input type="text"/> Cancel F5 <input type="text"/> Table F6 <input type="text"/> F7 <input type="text"/> Format F8 <input type="text"/>																	

The items on the screen are described next.

NAME: _____

(REQUIRED)

Enter a name to be assigned to this variable. The name must comply with the naming conventions of the programming language used for the application. A variable name may have one or more occurrences on a screen. However, when it has more than one occurrence, it must be a member of a table.

Defining Attributes for a Numeric Variable

VARIABLE TYPE: INTEGER REAL (REQUIRED)

Specify the type of numeric variable. There are two types:

Integer- The default. A positive or negative whole number.

Real - A floating point number.

LOGICAL HIGHLIGHTS: NORMAL ITALIC TITLE INPUT ERROR MESSAGE (OPTIONAL)

If you use logical highlights, leave physical highlights blank. You may only select one logical highlight.

Logical highlights enable you to define physical highlighting styles without regard for the types of terminals that will display the screen.

Each NOS/VE site can predefine, in the Terminal Definition Utility (TDU) up to six highlighting styles for each terminal type in use at the site. In the TDU these highlights have the logical names of normal, italic, title, input, error and message. The physical highlights actually displayed are controlled by how these names are defined in the TDU.

For example, italic may be defined as inverse video in the TDU for one terminal type. For a terminal that cannot display inverse video, italic may be defined as underline. The effect is that, regardless of terminal type, some form of highlighting can be applied. When defining logical highlights, you should be aware of the definitions in the TDU.

When you specify logical highlights, screen definitions do not ever need to change to be usable on different terminals. The association of a logical highlight to an actual highlight can change simply by creating a new terminal definition in the TDU.

PHYSICAL HIGHLIGHTS: NORMAL INVERSE HIGH LOW BLINK UNDERLINE (OPTIONAL)

If you use physical highlights, leave logical highlights blank. You may select more than one physical highlight.

Physical highlights display highlights that correspond to the names, normal, inverse, high, low, blink and underline, and are only effective on a terminal that is capable of displaying the specific highlight. If a specific highlight is not possible for a given terminal, it may be replaced by another, or not highlighted when that terminal is used.

If your application will be used on a single terminal type, physical highlights give you absolute control over highlighting styles, and thus, allow you to define, in detail, the visual effects for the screens displayed by your application.

BACKGROUND COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE
FOREGROUND COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE (OPTIONAL)

Background color is the color behind the displayed characters or graphics.

Foreground color is the color of the characters and lines displayed.

When you define color attributes, the selected color is only displayed on terminals capable of displaying color. If the terminal which displays your screen is not color-capable, the color attribute is ineffective.

I/O MODE: INPUT INPUT/OUTPUT OUTPUT (REQUIRED)

Specify how values can be input or output for this variable.

The Input/Output modes are:

- Input - Values for the variable can only be entered by the user. The values entered are not displayed.
- Input/output - The default. Values for the variable can be entered or changed by the user, and can also be changed by the program. The values entered are displayed.
- Output - Values for the variable can only be changed by the program. The value is displayed.

When the user of the screen enters data, the following conversion occurs:

- Integer numbers are truncated. For example, the number 2.5 is converted to 2.
- A real number is converted to a floating point number. For example, an entry of 2.5 is converted to 2.5E3.

Defining the FORTRAN Output Format

The Define FORTRAN Format screen is presented for specifying the output format for a numeric variable that is accessed by a FORTRAN application.

The screen is accessed by pressing the FORMAT function key after you complete the items on the Define Attributes screen for a numeric variable.

You do not have to define the FORTRAN output format. When you complete the items on the Define Attributes screen for a numeric variable, you can press the FINISH key and the defaults are used. The defaults are indicated in the discussion of the output format items shown on the screen later in this section.

When the Define FORTRAN Format screen is presented, the name of the variable and the maximum width of the variable are automatically displayed at the top of the screen. The maximum width is the number of characters that were marked for the variable.

The screen has two sections for specifying the output format: one for an integer variable and one for a real variable.

An integer variable can only have the I format and you can specify whether or not the value should always contain a sign character. Two values are requested to complete the definition: the total width of the formatted variable (including any sign character) and the minimum number of output digits.

Defining the FORTRAN Output Format

A real variable can have either a E, F, or G format and you can specify whether or not the value should always contain a sign character and whether or not to suppress leading zeroes. Two values are requested to complete the definition: the total width of the variable (including any sign characters) and the number of digits to the right of the decimal point. An optional field is available to specify the number of digits in the exponent field if an exponent field is to be included.

To exit the screen, you can either:

- Press the FINISH key to signal completion of defining attributes. A cursory validity check will be performed and then the definition is forwarded to Screen Formatting. You are returned to the User Edit screen. Any defined highlights are activated and displayed on the screen.
- Press the CANCEL key; the DEFINE function is cancelled and you are returned to the User Edit screen.
- Press the BACK key to return to Define Attributes for a numeric screen.

The Define FORTRAN Format screen is shown below:

```

EDIT                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
DEFINE                                DEFINE FORTRAN FORMAT
->FORMAT                               Numeric Variable

Name:                                  Maximum width      Integer

Attribute      Value(s)
Output format type:  E _ F _ G _ I
E,F,G format:    ___ Total width ___ Digits right of decimal
Always signed:    ___ Yes ___ No
Suppress zero:    ___ Yes ___ No
Number of digits: ___ in the exponent
I format:         ___ Total width ___ Minimum output digits
Always signed:    ___ Yes ___ No

-----
Choose output format type and fill appropriate blanks
Type any character next to list choices
Press FINISH when completed, or CANCEL to cancel

F1  F2  F3  F4  F5  F6  F7  F8 
    
```

The items on the screen are described below:

NAME:	MAXIMUM WIDTH	INTEGER or REAL
-------	---------------	-----------------

You cannot enter anything in these fields. The name and the maximum width of the variable are automatically displayed when the screen is presented. The maximum width is the width of the field you marked. The variable type (INTEGER or REAL) is indicated at the end of the field.

OUTPUT FORMAT TYPE: E F G I (REQUIRED)

Specify the format type for the variable. The choices are:

- E - Floating point with exponent. Real variables only.
- F - Floating point without exponent. Real variables only.
- G - Floating point with or without exponent. Real variables only.
- I - Decimal integer. Integer variables only.

E,F,G FORMAT: TOTAL WIDTH DIGITS RIGHT OF DECIMAL (REQUIRED)

Complete for real variables only. Enter the total width of the formatted variable (including any sign character), and the number of digits to appear at the right of the decimal point.

The defaults are:

- Total width = Number of characters marked for the variable.
- Digits right of decimal = one half the width, minus 1.

ALWAYS SIGNED: YES NO (REQUIRED)

Complete for real or integer variables. Specify whether or not the variable should always contain a sign character.

The default is:

- Sign character only appears if the value is negative (minus sign).

SUPPRESS ZERO: YES NO (OPTIONAL)

Complete for real variables only. Specify whether or not leading zeroes should be suppressed for the variable.

The default is:

- Suppress zero = yes. For example, 0.0 prints as spaces.

NUMBER OF DIGITS: IN THE EXPONENT (OPTIONAL)

Complete for real variables only. Enter the number of digits in the exponent if the variable has an exponent.

I FORMAT: TOTAL WIDTH MINIMUM OUTPUT DIGITS (REQUIRED)

Complete for integer variables only. Enter the total width of the formatted variable (including any sign character), and the minimum number of output digits.

The defaults are:

- Total width = Number of characters marked for the variable.
- Minimum output digits = 0. For example, 0 prints as a space.

ALWAYS SIGNED: YES NO

(REQUIRED)

Complete for integer or real variables. Specify whether or not the variable should always contain a sign character.

The default is:

Sign character only appears if the value is negative (minus sign).

Defining Attributes for a Table

The Define Attributes screen for a table is presented for defining or viewing the attributes of a table. You cannot change the definitions for a table. A description of how to create a table is provided in the section titled Creating a Screen.

A table is an area on the screen containing multiple occurrences of variables. A table can have one occurrence of two or more variables, two or more occurrences of one variable, or many occurrences of many variables. Any variable type can be included in a table.

After you define a table, individual occurrences of table variables can be MOVED to other locations on the screen.

A table must be deleted in its entirety. Deleting part of a table causes errors in the definitions when the screen is saved.

NOTE

When a table is deleted, all of the associated variable definitions are also deleted.

To access the screen to define a table:

1. You must first define as variables, the first occurrences of each variable that will be included in the table. Please refer to the previous sections, Defining Attributes for a Character Variable and Defining Attributes for a Numeric Variable, for information about how to define variables. If you need additional information about how to create a table, refer to the section Example of Creating a Screen for a detailed example of how to create a table.

2. Next you must mark the area the table will occupy. There are two methods available. You can MARK either:
 - a. An area enclosing only the first occurrences of each of the variables to be included in the table. Position the cursor on the first character of the first variable to be included in the table and press the MARK function key. The character is highlighted. Next, position the cursor on the last character of the last variable to be included in the table and press the MARK function key again. All variables included in the marked area are highlighted. For example:

Enter the Department Number: _____

NAME	TITLE	SALARY

F1 Unmark Mark

F2 Erase Define

F3 Sc1 Draw

F4 Copy Move

F5 Undo

F6 Quit

F7 NoKeys Toggle

F8 Ruler Center

With this method, when you access the Define Attributes screen for a table you must specify the number of visible occurrences for the table, and the maximum number of occurrences that can be transferred to the table.

To exit the screen, you can either:

- Press the FINISH key to signal completion of defining attributes. You are returned to the User Edit screen. Variables defined as table occurrences are shown with an underline.
- Press the CANCEL key; the DEFINE function is cancelled and you are returned to the User Edit screen.

The Define Attributes screen for a table is shown below:

```

SDF                                     NOS/VE SCREEN DESIGN FACILITY
SELECT
EDIT                                     DEFINE ATTRIBUTES
->DEFINE                                Table

Attribute                                Value(s)

Name: _____
Visible occurrences: _____
Maximum occurrences: _____

Fill appropriate blanks
Use SYSTEM or REPEAT for defaults
Press DELETE to remove table definition
Press FINISH when completed, or CANCEL to cancel
F1 System F2 Repeat F3 Finish F4 Cancel F5 Delete F6  F7  F8 
    
```

The attributes are described below:

NOTE

If you marked the entire area you want the table to occupy, the values for visible and maximum occurrences do not have to be entered. The values are automatically displayed on the Define Attributes screen by pressing the SYSTEM function key.

If you only marked an area enclosing the first occurrences for the variables to be included in the table, you must enter the values for visible and maximum occurrences.

NAME: _____

(REQUIRED)

Enter a name to be assigned to the table. The name must comply with the naming conventions of the programming language used by the application accessing the screen.

VISIBLE OCCURRENCES: _____

(OPTIONAL)

Enter the number of visible occurrences of data that can be displayed on this table at one time. There must be enough empty space on the screen under the first occurrences for the number of occurrences you specify. If this number is less than the maximum number of occurrences that can be transferred to the table at one time, the user must use the scrolling and paging keys to see all of the data.

MAXIMUM OCCURRENCES: _____

(OPTIONAL)

Enter the maximum number of occurrences of data that can be transferred to this table at one time. This number can be greater than the visible occurrences, but not fewer. If you use the SYSTEM function to calculate this number, it can be increased but not decreased.

Defining Attributes for a Box or Line

The Define Attribute screen for a box or line is presented for defining or changing the attributes of a box or line.

A box or line is generally used to: denote where data is to be entered by the user; provide a fixed area on the screen where the program can display data; frame a screen; or decorate a screen.

The only attributes that can be assigned to a box or line are display characteristics such as intensity, color and line width.

To access the screen:

1. The box or line must be drawn using the MARK and DRAW functions.
2. Position the cursor anywhere on the box or line and press the MARK function key. The box or line is highlighted.
3. Press the DEFINE function key.

To exit the screen, you can either:

- Press the FINISH key to signal completion of defining attributes. You are returned to the User Edit screen.

Any defined highlights are activated and displayed on the screen.

- Press the CANCEL key. The DEFINE function is cancelled and you are returned to the User Edit screen.

Defining Attributes for a Box or Line

The Define Attributes screen for a box or line is shown below:

SDF	NOS/VE SCREEN DESIGN FACILITY
SELECT	
EDIT	DEFINE ATTRIBUTES
->DEFINE	Box or Line
Attribute	Value(s)
Name:	_____
Intensity:	normal high low
Color:	black blue green magenta red cyan yellow white
Line width:	fine medium bold
<hr/> Fill appropriate blanks Type any character next to list choices Use SYSTEM or REPEAT for defaults Press FINISH when completed, or CANCEL to cancel	
F1 <input type="text"/> System F2 <input type="text"/> Repeat F3 <input type="text"/> Finish F4 <input type="text"/> Cancel F5 <input type="text"/> F6 <input type="text"/> F7 <input type="text"/> F8 <input type="text"/>	

The attributes are described below.

NAME: _____ (OPTIONAL)

Enter a name for the box or line.

INTENSITY: NORMAL HIGH LOW (OPTIONAL)

The brightness of the box or line.

COLOR: BLACK BLUE GREEN MAGENTA RED CYAN YELLOW WHITE (OPTIONAL)

The color of the box or line when displayed.

LINE WIDTH: FINE MEDIUM BOLD (OPTIONAL)

The thickness of the lines to be displayed.

Drawing a Box or Line (DRAW Function)

The DRAW function is used to draw lines and boxes on the screen.

Lines and boxes cannot intersect with other lines or boxes or with other fields on the screen. An error is displayed if this is attempted.

Drawing a Horizontal or Vertical Line

1. Position the cursor at one end (beginning or ending location) of where you want the line to appear, and press the MARK function key. The marked position is highlighted.
2. Position the cursor at the other end of the line, and press the DRAW function key. The line is drawn.

Alternatively, you can MARK both ends of where you want the line to be drawn and then press the DRAW function key.

Drawing a Box

1. Position the cursor at one corner of where you want the box to be drawn, and press the MARK function key. The marked position is highlighted.
2. Position the cursor at the opposing (non-adjacent) corner of where you want the box to be drawn, and press the DRAW function key. The box is drawn.

Alternatively, you can MARK both of the opposing corners of where you want the box to be drawn, and then press the DRAW function key.

After you have drawn a line or box, you can specify the intensity, color and width of a line or the lines surrounding the box. You simply position the cursor anywhere on the line and press the MARK function key. Then press the DEFINE function key. The Define Attributes screen for a box or line is displayed.

Erasing a Field (ERASE Function)

The ERASE function erases a field on the screen. The area to be erased must completely contain fields, but cannot split a field. Defined attributes for an erased field are also erased.

The erased area becomes an empty area on the screen and can be reused.

NOTE

A table must be erased in its entirety. Erasing part of a table causes errors in the definitions when the screen is saved. When a table is erased, all of the associated variable definitions are also erased.

To erase a field:

1. MARK the field to be erased. Refer to the MARK function described in this section of the manual.
2. Press the ERASE function key. The field is erased and the area becomes blank.

Marking a Field (MARK Function)

The MARK function is used to point to the area on your screen on which you want to perform an editing function.

Editing functions which require that you mark the area before initiating the function display an error message if no marks are set.

Any area or any type of field can be marked. However, marks must not split defined fields. Whole areas of the screen, containing any type of fields, can be marked with an imaginary box, so that an editing function can be performed on the entire area as a single unit.

Areas remain marked until another MARK function is performed, until they are UNMARKed, or until a function (other than COPY) using marks is initiated.

Marking a Defined Field

1. Position the cursor on any character position occupied by the field to be marked and press the MARK function key. The field can be constant text, a variable, a table variable, a box or line.

The field is highlighted as follows:

- If the field is constant text, a variable, or a table variable, the defined size of the field is highlighted.
- If the field is a text box, the entire boxed area is highlighted.
- If the field is a line or box, the entire line or box is highlighted.

Marking an Undefined Field

1. If marking constant text, a variable, or a line, position the cursor on the first or last character of the field to be marked and press the MARK function key. The marked character is highlighted.

Position the cursor on the opposite end of the first mark, and press the MARK function key again.

2. If marking a box, position the cursor on any corner where you want the box to begin and press the MARK function key. The marked corner is highlighted.

Position the cursor on the opposing (non-adjacent) corner of the first mark, and press the MARK function key again.

Moving a Field

In either case, the entire marked field is highlighted. You can now perform an editing function on the marked field.

An area can sometimes be marked by using one or two marked fields as one or both marks for the new area to be marked. For example, if a vertical line is marked, an area of the same height can be marked by positioning the cursor to the left or right of the vertical line, and pressing the MARK function key again.

Similarly, an area that is bounded by two defined fields can be marked with an imaginary box by marking each of the defined fields. That area can then be defined, and if desired, it can be moved or copied with all of the defined attributes that are applicable for the enclosed fields.

Moving a Field (MOVE Function)

The MOVE function moves a field from one location to another location on a screen.

The area you move the field from is left blank; MOVE does not expand or compress your existing screen image.

To move a field:

1. MARK the field to be moved. Refer to the MARK function described in this section of the manual.
2. Position the cursor at the first character of the area where you want the marked field to be moved.
3. Press the MOVE function key. The field is moved to the location where the cursor is positioned.

If you attempt to move a field into an occupied area, SDF issues an error message and allows you to retry at a different location, or you can make the destination area clear of fields.

Defined attributes for the moved field are carried along to the new location. Marks are cleared after the MOVE function is complete.

Turning Off Function Key Prompts (NOKEYS Function)

The NOKEYS function turns off the function key prompts displayed at the bottom of the screen.

While editing a screen, you may need to create or change fields in the area of the screen that is overlaid by these function key prompts.

To turn off function key prompts:

Press the NOKEYS function key.

All function keys remain active, even though they are not displayed at the bottom of the screen.

To display the function key prompts again, simply press the NOKEYS function key again.

Ending an SDF Session (QUIT Function)

The QUIT function ends an SDF session and returns you to NOS/VE.

If you press the QUIT function key from the Banner screen or from the Select screen, you are immediately returned to NOS/VE.

If you press QUIT after using an editing function on a new or existing screen and you have not used the SAVE function, SDF offers you a chance to save the screen by overlaying the screen with the following message:

```
Press NEXT to replace existing screen.
Enter unique name, press NEXT to save new screen.
Press BACK to discard screen, QUIT to exit SDF.
```

```
Record definition output will be produced in
_cobol _ansi fortran _cdc fortran _cybil
```

Press the NEXT key to replace an existing screen to which you have made changes. Enter a unique name and press NEXT to save a new screen, press the BACK key to discard the screen, or press QUIT to exit SDF (the screen will also be discarded).

The line at the bottom of the overlay is provided for indicating the programming languages for which you want a record definition generated for the screen. The language checked is the language specified when you defined the screen profile. You can enter any character next to as many of the languages as desired. There will be one SCU deck generated for each language selected. If no languages are selected, no record definitions will be generated.

If you press QUIT and you have not used an editing function, the message is not displayed; the session is ended and the entries are discarded.

Displaying Character and Line Positions for a Screen (RULER Function)

The RULER function displays a horizontal and vertical scale on the screen you are creating or editing. The scale shows character positions and line numbers for the screen.

While the screen remains visible, the scale appears as foreground, giving your terminal display a two-dimensional appearance.

The scale intersects at the position of the cursor when you initiate the RULER function.

Executing an SCL Command

To display the scale:

1. Position the cursor at the point where you want the horizontal and vertical lines to intersect.
2. Press the RULER function key.

At the position where the scale intersects, the fields on the screen are overlaid; the fields are still there, but not visible. You can move the scale at anytime by positioning the cursor on another area and pressing the RULER function key.

To remove the scales from the screen, you can either:

- Press the RULER function key twice in succession without moving the cursor, or
- Position the cursor at the position where the scales intersect, and press the RULER function key.

Executing an SCL Command (SCL Function)

While editing or creating a screen, the SCL function enables you to interrupt editing and execute NOS/VE SCL commands.

To execute an SCL command:

1. Press the SCL function key. This creates a command line at your terminal's HOME line. The cursor is positioned on the first character position of the command line.
2. Type the SCL command, and press the NEXT key. The command is executed.

When all of the output from the command has been displayed at your terminal, a message is displayed prompting you to return to your edit session by pressing the NEXT key.

Displaying Function Key Prompts (TOGGLE Function)

The TOGGLE function displays, at the bottom of the User Edit screen, the editing functions available. There are two sets of editing functions, MAIN editing functions and SECONDARY editing functions.

Only one set of these function key prompts are displayed at a time. To use a given function, it must be displayed at the bottom of the screen. You can toggle between the main and secondary editing functions at will, simply by:

Pressing the TOGGLE function key.

Cancelling Editing Changes (UNDO Function)

The UNDO function cancels the effects of the last editing function you performed. Only the last editing function can be cancelled.

If you discover, after making an editing change, that the change is not desirable or in error, the UNDO function cancels the editing change and returns the screen to its state before the editing change was initiated.

To UNDO editing changes:

Press the UNDO function key.

The screen image is changed back to its state prior to the previous editing function you performed.

Unmarking a Field (UNMARK Function)

The UNMARK function clears all MARKed fields or areas on the screen.

To unmark an area:

Press the UNMARK function key.

Fields or areas on the screen highlighted by the MARK function are returned to their original state; with any previously displayed highlights restored.

Secondary Editing Functions

Defining Screen Attributes (ATTRIB Function)

The ATTRIB function is used to access the Define Attribute Groups screen. This screen is used to define or delete attributes that can be used dynamically by the application program to temporarily highlight a field on a screen. For example, these attributes can be called in the application program by the name you have specified to temporarily highlight a field when an error condition occurs when data is entered in the field.

You may define as many attributes as desired for the screen. To do so you must access this screen for each definition. To access the screen:

1. If the secondary function key prompts are not displayed, press the TOGGLE function key.
2. Press the ATTRIB function key.

The Define Attribute Groups screen shown below is displayed:

SDF	NOS/VE SCREEN DESIGN FACILITY
SELECT	
EDIT	DEFINE ATTRIBUTES
->ATTRIBUTE	Define Attribute Groups
Attribute Name:	Value(s)
Logical highlights:	<u>italic</u> <u>title</u> <u>input</u> <u>error</u> <u>message</u>
Physical highlights:	<u>inverse</u> <u>high</u> <u>low</u> <u>blink</u> <u>underline</u>
Background color:	<u>black</u> <u>blue</u> <u>green</u> <u>magenta</u> <u>red</u> <u>cyan</u> <u>yellow</u> <u>white</u>
Foreground color:	<u>black</u> <u>blue</u> <u>green</u> <u>magenta</u> <u>red</u> <u>cyan</u> <u>yellow</u> <u>white</u>
Line Width:	<u>fine</u> <u>medium</u> <u>bold</u>
Special attributes:	<u>protect</u> <u>hidden</u>

Fill appropriate blanks	
Type any character next to list choices	
For DELETE - only the name is required	
Press FINISH when completed, or CANCEL to cancel	
To display all attribute definitions, CANCEL, then use SEEDEF	
F1	F2
<input type="text"/>	<input type="text"/>
F3	F4
Finish	Cancel
F5	F6
Delete	<input type="text"/>
F7	F8
<input type="text"/>	<input type="text"/>

To complete the items on the Define Attribute Groups screen, enter any character next to your choice on the screen. The selected attributes will be associated with the name you entered.

After completing the screen, press the FINISH function to complete the definitions. The definitions are processed and you are returned to the User Edit screen.

To delete an existing definition, you simply enter the name of the definition after NAME: and press the DELETE function key. The request is processed and you are returned to the User Edit screen.

Pressing the CANCEL function key will return you to the User Edit screen with no changes made to the attributes defined for the screen.

The items on the Define Attribute Groups screen are described next.

NAME: _____ (REQUIRED)

Enter a name to be associated with the attributes defined on this screen. The name will be used by the application program to call the defined attributes. The name must comply with the naming conventions of the programming language used for the application.

LOGICAL HIGHLIGHTS: ITALIC TITLE INPUT ERROR MESSAGE (OPTIONAL)

If you use logical highlights, leave physical highlights blank. You may only specify one logical highlight.

Logical highlights enable you to define physical highlighting styles without regard for the types of terminals that will display the screen.

Each NOS/VE site can predefine, in the Terminal Definition Utility (TDU) up to six highlighting styles for each terminal type in use at the site. In the TDU these highlights have the logical names of italic, title, input, error and message. The physical highlights actually displayed are controlled by how these names are defined in the TDU.

For example, italic may be defined as inverse video in the TDU for one terminal type. For a terminal that cannot display inverse video, italic may be defined as underline. The effect is that, regardless of terminal type, some form of highlighting can be applied. When defining logical highlights, you should be aware of the definitions in the TDU.

When you specify logical highlights, screen definitions do not ever need to change to be usable on different terminals. The association of a logical highlight to an actual highlight can change simply by creating a new terminal definition in the TDU.

PHYSICAL HIGHLIGHTS: INVERSE HIGH LOW BLINK UNDERLINE (OPTIONAL)

If you use physical highlights, leave logical highlights blank. You may specify more than one physical highlight.

Physical highlights display highlights that correspond to the names: inverse, high, low, blink and underline, and are only effective on a terminal that is capable of displaying the specific highlight. If a specific highlight is not possible for a given terminal, it may be replaced by another, or not highlighted when that terminal is used.

If your application will be used on a single terminal type, physical highlights give you absolute control over highlighting styles, and thus, allows you to define, in detail, the visual effects for the screens displayed by your application.

Defining Function Keys

```
BACKGROUND COLOR:  _BLACK _BLUE _GREEN _MAGENTA _RED _CYAN _YELLOW _WHITE
FOREGROUND COLOR:  _BLACK _BLUE _GREEN _MAGENTA _RED _CYAN _YELLOW _WHITE
```

Background color is the color behind the displayed characters or graphics.

Foreground color is the color of the characters and lines displayed.

When you define color attributes, the selected color is only displayed on terminals capable of displaying color. If the terminal which displays your screen is not color-capable, the color attribute is ineffective.

```
LINE WIDTH:  _FINE _MEDIUM _BOLD (OPTIONAL)
```

The width of the line used for graphic fields - lines and boxes.

```
SPECIAL ATTRIBUTES:  _PROTECT _HIDDEN (OPTIONAL)
```

This attribute is used to indicate special conditions for data entered on a screen.

PROTECT - May be used to temporarily freeze the contents of an input/output field so that the user cannot change the field until this attribute is removed.

HIDDEN - May be applied to fields where the input value should not remain visible on the screen after being entered.

Defining Function Keys (EVENTS Function)

The EVENTS function enables you to define function keys for the screen you are creating or editing. You are presented with the Define Function Keys screen on which you specify the program event name, key assignment, menu label and the action to be taken when the key is pressed. Refer to the Screen Formatting Usage manual for more information about defining function keys.

Only nine (9) function key assignments can be entered on the Define Function Keys screen. If you have more than nine events to define, you can use the paging and scrolling terminal keys (FWD, BKW, UP and DOWN) to enter more assignments.

To define function keys:

1. If the secondary function key prompts are not displayed, press the TOGGLE function key.
2. Press the EVENTS function key.

ACTION

(OPTIONAL)

A mnemonic name indicating the action to be taken by Screen Formatting when this key is pressed. For additional information, refer to the Screen Formatting Usage manual.

Enter one of the following:

normal, abnormal, table_fwd, table_bkw, table_up, table_down, variable_fwd, variable_bkw, tab_next, tab_prior.

These actions are described below:

normal

The application program will process data entered by the terminal user. Normal is the default.

abnormal

The program will not process data entered by the terminal user. The program will usually delete the screen from the display and move on to other processing. The program can use an abnormal event to help a terminal user supply data for a particular variable.

table_fwd

Causes the next page of a table to be displayed. A page is the number of visible occurrences on a table. The event is handled by Screen Formatting and is not passed to the application program.

table_bkw

Causes the previous page of a table to be displayed. The event is handled by Screen Formatting and is not passed to the application program.

table_up

Causes the table occurrence under the cursor to move to the first visible occurrence on the table. The event is handled by Screen Formatting and is not passed to the application program.

table_down

Causes the table occurrence under the cursor to move to the last visible occurrence on the table. The event is handled by Screen Formatting and is not passed to the application program.

variable_fwd

Causes the variable at the cursor position to scroll forward. When the event occurs, the character at the cursor position becomes the first character the terminal user sees in the variable field. The event is handled by Screen Formatting and is not passed to the application program.

variable_bkw

Causes the variable at the cursor position to scroll backward. When the event occurs, the character at the cursor position becomes the last character the terminal user sees in the variable field. The event is handled by Screen Formatting and is not passed to the application program.

tab_next

Moves the cursor to the next input variable on the screen. If the cursor is currently positioned at the last variable on the screen, this event causes the cursor to move to the first input variable on the screen. The input variables are ordered left to right, top to bottom on the screen.

tab_prior

Moves the cursor to the previous input variable on the screen. If the cursor is currently positioned at the first variable on the screen, this event causes the cursor to move to the last input variable on the screen.

Screen Formatting updates the screen data for a normal event, but does not if the event is abnormal. Both normal and abnormal events are reported to the application program. When paging and scrolling actions are used, Screen Formatting will do the paging automatically, and the application program is not notified of the event. The same is true for tab actions, which automatically tab to input fields on the screen.

Ending an SDF Session (QUIT Function)

The QUIT function ends an SDF session and returns you to NOS/VE.

If you press the QUIT function key from the Banner screen, or from the Select screen, you are immediately returned to NOS/VE.

If you press QUIT after using an editing function on a new or existing screen and you have not used the SAVE function, SDF offers you a chance to save the screen by overlaying the screen with the following message:

Press NEXT to replace existing screen.
 Enter unique name, press NEXT to save new screen.
 Press BACK to discard screen, QUIT to exit SDF.

Record definition output will be produced in
 _cobol _ansi fortran _cdc fortran _cybil

Saving a Screen

Press the NEXT key to replace an existing screen to which you have made changes. Enter a unique name and press NEXT to save a new screen, press the BACK key to discard the screen, or press QUIT to exit SDF (the screen will also be discarded).

The line at the bottom of the overlay is provided for indicating the programming languages for which you want a record definition generated for the screen. The language checked is the language specified when you defined the screen profile. You can enter any character next to as many of the languages as desired. There will be one SCU deck generated for each language selected. If no languages are selected, no record definitions will be generated.

If you press QUIT and you have not used an editing function, the message is not displayed; the session is ended and the entries are discarded.

Saving a Screen (SAVE Function)

The SAVE function saves the screen you are creating or editing; the screen is saved in the library specified on the DESS command when you signed on to SDF, or if no library was specified, it is saved in the default library SCREEN_LIBRARY in your current working catalog.

To save a screen:

1. If the secondary function key prompts are not displayed, press the TOGGLE function key.
2. Press the SAVE function key. The following is displayed:

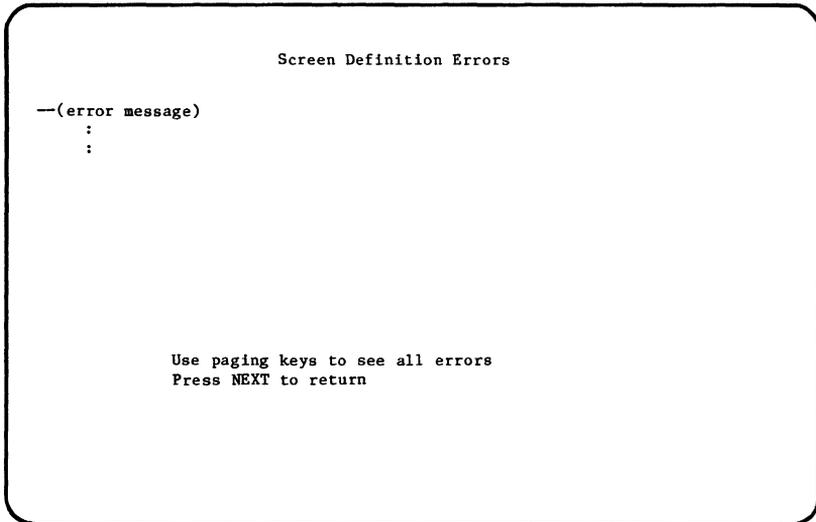
Press NEXT to replace existing screen.
Enter unique name, press NEXT to save new screen.
Press BACK to discard screen, QUIT to exit SDF.

Record definition output will be produced in
_cobol _ansi fortran _cdc fortran _cybil

Press the NEXT key to replace an existing screen to which you have made changes. Enter a unique name and press NEXT to save a new screen, press the BACK key to discard the screen, or press QUIT to exit SDF (the screen will also be discarded).

The line at the bottom of the overlay is provided for indicating the programming languages for which you want a record definition generated for the screen. The language checked is the language specified when you defined the screen profile. You can enter any character next to as many of the languages as desired. There will be one SCU deck generated for each language selected. If no languages are selected, no record definitions will be generated.

After you use the SAVE function, the system checks the screen definitions for conflicts or inconsistencies that were not detected while editing. If any errors exist, you are presented with the following screen:



The Screen Definition error screen contains information about each error encountered in the screen definition. When you have looked at all of the errors, you can return to the User Edit Screen by pressing the RETURN key.

You can fix the errors on the screen and resave the screen. If you do not fix the errors, the screen will not be saved and the screen record definition will not be written to your source library until the screen definition is free of errors.

If the error is either a duplicate or blank screen name, the save overlay is displayed again enabling you to fix the name problem.

Executing an SCL Command (SCL Function)

While editing a screen, the SCL function enables you to interrupt editing and execute NOS/VE SCL commands.

To execute an SCL command:

1. Press the SCL function key. This creates a command line at your terminal's HOME line. The cursor will be positioned on the first character position of the command line.
2. Type the SCL command, and press the NEXT key. The command is executed.

After the command has been executed, a message is displayed prompting you to press the NEXT key to return to your edit session. Press the NEXT key; you are returned to SDF with the edit screen displayed.

Displaying the Screen Definitions (SEEDF Function)

The SEEDF function overlays the User Edit screen with a window showing all of the characteristics defined for the screen. This information consists of the screen name (if any), the programming language, background and foreground color, border size, width, height and column and line origin. These items were defined on the Define Screen Profile screen.

In addition, the display shows the attributes defined by the ATTRIB function. These attributes can be used by the application program to dynamically change the display characteristics of a field, for example, to indicate an error condition during processing of the field. To display the screen definitions do the following:

1. If the secondary function key prompts are not displayed, press the TOGGLE function key.
2. Press the SEEDF function key.

An example of the screen definition display is shown below:

```

Screen Name:  myscreen
Language:    Cobol
Background:  Black
Foreground:  White
Border:      None
Width:       Full Screen
Height:      Full Screen
Column Origin:  1
Line Origin:  1

Attribute List:  1      defined for this screen.
Name:  one
Attributes:  black background, white foreground,error.
End of list
    
```

To remove the screen definitions from the screen, press the NEXTkey.

The information on the display is:

Screen Name

The name of the screen. If it is blank, the screen is still being created and has not yet been named.

Language

The application language (COBOL, FORTRAN or CYBIL).

Background

The background color of the screen.

Foreground

The color of the characters on the screen.

Border

The thickness of the border (Fine, Medium, Bold or None).

Width

The width of the screen in characters. If Full Screen is indicated, the screen is defined to be the size of the terminal on which the application is running. If values are displayed, the screen size is fixed.

Displaying the Screen Definitions

Height

The height of the screen in lines. If Full Screen is indicated, the screen is defined to be the size of the terminal on which the application is running. If values are displayed, the screen size is fixed.

Column Origin

The column in which the left side of the screen will be positioned when displayed.

Line Origin

The line in which the top of the screen will be positioned when displayed.

Attribute List

A list of all the screen attributes defined with the ATTRIB function. These are display attributes that can be called by name by the application program at any time. Scrolling may be necessary to see the whole list. The COUNT indicates how many attributes are defined. Examples of the three possible attribute list formats follows:

- ① → Attribute List: None defined for this screen.

- ② → Attribute List: 1 defined for this screen.
Name: AAA
Attributes: Black background, white foreground, error.
End of list

- ③ → Attribute List: 2 defined for this screen.
Name: AAA
Attributes: black background, white foreground, error.
Name: BBB
Attributes: Blue background, magenta foreground,
protect, blink.

Only one of these formats is displayed.

Displaying a Screen While Editing (SHOW Function)

The SHOW function displays the screen you are editing.

When the screen is displayed it looks exactly the way it will look to the end user; in the assigned location and with all of the visual effects (highlighting) and function key prompts you have defined for the screen.

To display a screen:

1. If the secondary function key prompts are not displayed, press the TOGGLE function key.
2. Press the SHOW function key. The screen is displayed.

To remove the screen from the display, press the NEXT key.

Displaying Function Key Prompts (TOGGLE Function)

The TOGGLE function displays, at the bottom of the User Edit screen, the editing functions available. There are two sets of editing functions, MAIN editing functions and SECONDARY editing functions.

Only one set of these function key prompts are displayed at a time. To use a given function, it must be displayed at the bottom of the screen.

You can toggle between the main and secondary editing functions at will, simply by:

Pressing the TOGGLE function key.



Appendixes

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A

Attribute

A property of a screen, variable, table of variables, object or constant that is needed to process a form.

C

Catalog

A directory of files maintained by the operating system for a user. In addition to files, a catalog can contain other catalogs.

E

Event

A property of a screen that is defined when the screen is created and is referenced by the application program.

F

Field

Can be constant text, a variable, box or line drawing, or a table that contains one or more occurrences of one or more variables.

Full Screen Application

A program that utilizes the entire terminal screen to display the data and/or user's options. The user can move the cursor around the screen to input and modify data or to indicate which function to execute.

Function

An instruction to a full screen program. If function keys are available on the keyboard, the user can press a function key to execute a function.

Function Key

A key on a keyboard that is used to execute a function. Function keys are often labelled with an F and a digit. For example, F1, F2, or F3.

Function Key Prompts

The association of functions with the function keys on the user's keyboard. In most full screen programs, the function key assignments are displayed at the bottom of the screen.

O

Occurrence

The number of times a variable appears on the screen.

P

Program

A set of instructions or actions that provides an interface between a user and the computer.

Protected and Unprotected Fields

Protected fields are fields that cannot be changed by the terminal user. Unprotected text can be changed by the terminal user.

Related Manuals

B

Table B-1 lists all manuals that are referenced in this manual or that contain background information. A complete list of NOS/VE manuals is given in the SCL Language Definition manual. If your site has installed the online manuals, you can find an abstract for each NOS/VE manual in the online System Information manual. To access this manual, enter:

explain

Table B-1. Related Manuals

Manual Title	Publication Number	Online Title
Terminal Definition for NOS/VE Usage	60464016	
Screen Formatting Usage	60488813	
NOS/VE System Usage	60464014	
Context Usage Manual	60488403	CONTEXT

Ordering Printed Manuals

You can order Control Data manuals through Control Data sales offices or through:

Control Data Corporation
Literature and Distribution Services
308 North Dale Street
St. Paul, Minnesota 55103

Accessing Online Manuals

To access an online manual, log in to NOS/VE and specify the online manual title (listed in table B-1) on the EXPLAIN command. For example, to read the Screen Design Facility online manual, enter:

explain manual=SDF



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Screen Design Facility Usage 60488613 D

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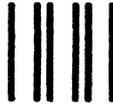
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