

# Using the Outline Editor

The outline editor is used to define boxes for screens created with the Natural map editor. This is achieved by setting box codes for the fields around which you want to draw a box. Box codes represent values of the BX parameter.

In principle, the outline editor is used for creating boxes and not for defining fields. Field definitions are made with the map editor.

This section covers the following topics:

- Prerequisites
  - Invoking the Outline Editor
  - Using Box Codes
  - Using the End Marker
  - List of Box Codes and BX Parameter Values
  - Example of Box Coding
  - Line Commands and PF Keys
- 

## Prerequisites

The following prerequisites are required for using the outline editor:

- Suitable Terminal
- Migration of Maps Created with KAPRI
- Definition of Delimiter Class D

## Suitable Terminal

The terminal or terminal emulation used must support viewing boxes. This is usually a terminal or terminal emulation that supports DBCS (Double Byte Character Set) characters. Otherwise, the boxes generated for a map will not be displayed at execution time.

### Related Topic:

For information on the features implemented in Natural to support DBCS, see also *Double-Byte Character Sets* in the *Operations* documentation.

## Migration of Maps Created with KAPRI

Maps created with Natural Version 3.1 and KAPRI must be converted into maps that are suitable for compilation and execution with Natural for MBCS. See *Handling of Maps Converted Using Natural for MBCS* in the current *Natural Release Notes for Mainframes*.



### Warning:

**KAPRI remembers the screen position of DBCS (Double Byte Character Set) characters and boxes to display them correctly. Unlike KAPRI, Natural for MBCS uses the real display length and Natural language extensions to determine the correct display position. Therefore, it is essential that maps created with KAPRI are converted before they are executed with Natural and Natural for MBCS. Executing a map that has not been converted may lead to unpredictable results when such a map is displayed.**

For the migration of KAPRI maps, we recommend that you keep backup copies and verify the proper layout of the new maps after the migration by using the **Test** function of the map editor or the outline editor.

Because it is not possible to edit converted KAPRI maps with a Natural version that does not support Natural for MBCS, we strongly recommend that you store the converted maps in a different library (or in a different FUSER system file) than the maps created with Natural Version 3.1 and KAPRI.

### ▶ To convert single maps created with KAPRI

1. Invoke the **Edit Map** menu of the map editor.
2. In the **Edit Map** menu, enter function code X for **Migration of Maps created with KAPRI** and the name of the map to be converted.
3. Press ENTER.

A message appears confirming that the map has been successfully converted.

### ▶ To convert multiple maps created with KAPRI

- Use the CATALL system command as described in the *System Commands* documentation.

The CATALL command also invokes and executes the migration function if the CATALOG, STOW or CHECK option is selected on the **CATALL** screen or specified in a CATALL direct command. No migration is performed if the SAVE option is specified.

## Definition of Delimiter Class D

Delimiter class D must be defined in the map settings of each map to be edited with the outline editor. If this delimiter class is missing, you cannot open the outline editor but will receive an appropriate error message instead.

Delimiter class D is usually added automatically when you read in the map definition of a map created with KAPRI or when you create a new map with Natural as described in *Delimiter Class D* in the *Map Editor* documentation. However, for an existing map created with Natural, you must add the delimiter class as described in the following instructions.

### ▶ To define delimiter class D

1. Invoke the map editor for a map that is stored as a source object in a library in a Natural system file.

The editing area of the map editor appears, which contains the specified map.

2. Press PF2 (Mset) to change the default settings for the map.

The **Define Map Settings** screen appears.

3. In the **Delimiters** section, add delimiter class D (or replace an existing delimiter) similar to the example shown below:

Delimiters			
Cls	Att	CD	Del
T	D		BLANK
T	I		?
A	D		_
A	I		)
A	N		^
M	D		&
M	I		:
O	D		+
O	I		(
<b>D</b>	<b>I</b>		<b>#</b>

4. Invoke the **Edit Map** menu of the map editor and save the map.

For detailed information on delimiters, see the relevant section in the *Map Editor* documentation.

## Invoking the Outline Editor

This section provides instructions for invoking the outline editor.

### ▶ To invoke the outline editor

1. Open the **Edit Map** menu of the map editor.
2. Enter function code O for **Outline Editor** and the name of the map to be edited with the outline editor. The map must either be contained in the current source work area of the editor or stored as a source object in a library in a Natural system file.

An **Outline Editor** screen similar to the example below appears in split-screen mode for the specified map:

```

Outline Editor
Code BX  Code BX  Code BX  Code BX  Code BX  Code BX  Code BX  Code BX
T  _  B  _  I  _  C  □  1  □  3  □  5  □  U  □
L  |  R  |  H  |  O  □  2  □  4  □  6  □  E  END
001  --010--+-+--+-+--030--+-+--+-+--050--+-+--+-070--+-+--
-
#Personal#Information

First Name: :XXXXXXXXXXXXXXXXXXXXX
Last Name:  :XXXXXXXXXXXXXXXXXXXXX
Street:     :XXXXXXXXXXXXXXXXXXXXX
Zip Code / City: :99999999 :XXXXXXXXXXXXXXXXXXXXX

Phone Office: :XXXXXXXXXXXXXXXXXXXXX
Home:        :XXXXXXXXXXXXXXXXXXXXX
Mobile:      :XXXXXXXXXXXXXXXXXXXXX

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help   Exit  Test  BoxDi --  -  +  Full <  >  Let

```

The upper part of the outline editor screen shows all valid box codes (for example, **O**), symbols for the type of box they create (for example, a square  for **O**) and the end marker **E (END)**. This chart is not displayed in full-screen mode.

The lower part contains the editing area with the map definition of the specified map. The characters indicating data fields (such as X or 9) are identical to the characters used in the editing area of the map editor. For details, see *Defining Map Fields* in the *Map Editor* documentation.

## Using Box Codes

A box code is a single character which represents a value of the BX session parameter or a combination of values. For example, the box code **O** represents a BX setting of **TBLR**. For a description of possible parameter values, see *List of Box Codes and BX Parameter Values*.

The rules and conditions that apply when using box codes are described in the following section. The examples mentioned refer to *Example of Box Coding*.

A box code is *not* case-sensitive. You can enter a box code for any of the following:

- A data field.
- A text field created with delimiter class **D** (delimiter class **T** is *not* allowed).
- A blank character or a sequence of blank characters.

This section covers the following topics:

- Entering Box Codes for Data and Text Fields
- Entering Box Codes for Blank Characters
- Automatic Box Continuation
- Changing or Deleting Box Codes

## Entering Box Codes for Data and Text Fields

For a data field or a text field of delimiter class *D*, enter a box code in the attribute position of the field for which you want to create a box. The attribute position is immediately in front of the field and is denoted by one of the following:

- The delimiter character as assigned to the field with the map editor.  
Example: The text field `Information`.
- A box code that has already been entered for the field. The outline editor then hides the delimiter character and shows the box code instead.  
Example: The text field `Personal`.

For a data field that has been defined as an array, you can enter a box code for each occurrence of this array. Example: `Office:`, `Home:` and `Mobile:` are three occurrences of a one-dimensional array (`A20/1:3`). If you want the box code to be valid for all occurrences of this array, you can modify the `BX` parameter with the extended field editing function of the map editor.

## Entering Box Codes for Blank Characters

You can create a box for a blank character or a sequence of blank characters. This provides the option to use blank map areas for the box design.

For a blank character or a sequence of blank characters, enter a box code in an empty line position.

The length of the box is determined by the number of blank characters to which the used box code applies and the end marker (described in *Using the End Marker*):

- If the end marker is set, the box is drawn around the number of characters from the box code to the end marker.  
Examples:  
The box codes **2** and **U** in the blank area next to the data field `Last Name:`.
- If no end marker is set, the box is drawn around either the number of characters from the box code to the next field or to the end of the line.  
Exceptions: The box codes **L** and **R** only create boxes for a single blank character, regardless of whether or not the end marker is used. Example: The box code **L** between the text fields `Phone` and `Office:`.

A box created for a sequence of blank characters is indicated by a number of periods (.) as shown in *Example of Box Coding after ENTER*. No periods are displayed for a box created with a box code that is immediately followed by the end marker (for example: `OE`) or the box codes **L** and **R**.

A box created for a blank character or a sequence of blank characters is generated as a blank text field of delimiter class D into the map definition.

You can reduce the length of a box by replacing any of the periods (.) with the end marker (see also *To place the end marker*) or a box code. The field then ends at the period you replaced.

You can edit a blank text field with the extended field editing function of the map editor.

## Automatic Box Continuation

A box code that has a top and/or bottom line but no right vertical line (the box codes **T**, **B**, **I**, **C**, **3** and **5**) remains valid for subsequent fields in this line. The box then ends either at the next box code, the next text field of delimiter class T or at the end of the line. Examples: The text fields `Personal` and `Information` and the data fields next to `City:`.

When you enter one of the above box codes, the outline editor places automatically generated box codes in front of all subsequent fields to which this box code applies. The sequence of automatically generated box codes is listed under *Auto-Generated Box Codes* in *List of Box Codes and BX Parameter Values*. Box codes are only generated automatically when you initially enter a box code. You can replace automatically generated box codes.

## Changing or Deleting Box Codes

You can change single or multiple box codes by replacing each box code with another box code.

You can delete single or multiple box codes either by replacing each box code with a blank character or by using one of the line commands described in *Line Commands and PF Keys*.

In general, you can only delete the box code of a field and *not* the field itself. A field definition can only be deleted with the map editor. Exception: When you delete the box code of a blank field, you also delete the respective field in the map definition.

## Using the End Marker

The end marker **E** (**END**) determines the length of a box created for a single blank character or a sequence of blank characters.

Exceptions: The box codes **L** and **R** always create boxes for a single blank character only. They can be entered without the end marker. Example: The box code **L** between the text fields `Phone` and `Office:`.

The end marker is *not* case-sensitive.

The end marker is *not* generated as a BX parameter value into the map source.

The end marker is valid for the box code and the line where it is placed. You cannot enter a box code in one line and the end marker in another line to extend a box over multiple lines.

### To place the end marker

1. In an empty line position, enter a box code where you want the box to start and an E where you want the box to end.

Example:

The columns **035** and **059** in the empty line above `Last Name :` in *Example of Box Code Settings*.

2. Press ENTER to confirm your entries.

The blank characters delimited by box code and end marker (in the example, between the columns **035** and **059**) are replaced by periods (.).

The end marker is no longer indicated on the screen.














3. You can reduce the length of a box by overwriting any of the periods (.) with the end marker.

Example: U . . . . . E . . . . .

The box then ends at the period you overwrote.

## List of Box Codes and BX Parameter Values

The box codes listed in the editing area of the outline editor are explained in the following table. The table also indicates the sequence of automatically generated box codes (if relevant for a box code) and the equivalent BX parameter values (in any order).

Box	Borders	Box Codes	BX Values	Auto-Generated Box Codes	BX Values for Auto-Generated Box Codes
	Top line	T	T	T	T
	Bottom line	B	B	B	B
	Top and bottom line	I	TB	I	TB
	Top, bottom and left vertical line	C	LTB	I	TB
	Top, bottom and right vertical line	1	TRB		
	Top and left vertical line	3	LT	T	T
	Top and right vertical line	4	TL		
	Bottom and left vertical line	5	LB	B	B
	Bottom, left vertical and right vertical line	U	LBR		
	Left vertical line	L	L		
	Right vertical line	R	R		
	Left and right vertical line	H	LR		
	Top, bottom, left vertical and right vertical line	O	TBLR		

## Example of Box Coding

This section provides an example of box coding, which is based on the map definition shown in *Invoking the Outline Editor*. This example is not intended to provide guidance for designing maps with boxes, but rather demonstrates how box codes can be used.

- Example of Box Code Settings
- Example of Box Coding after ENTER
- Example of a Box Layout

### Example of Box Code Settings

The example below shows how box codes can be entered in the outline editor:



```

                                O u t l i n e   E d i t o r
Code BX  Code BX  Code BX  Code BX  Code BX  Code BX  Code BX  Code BX
  T  _   B  _   I  _   C  _   1  _   3  _   5  _   U  _
  L  |   R  |   H  |   O  |   2  |   4  |   6  |   E  END
001  --010--+---+---+---+---+---+---+---+---+---+---+---+---+
                                BPersonal#Information

                                First Name:  OXXXXXXXXXXXXXXXXXXXXX

                                Last Name:  L:XXXXXXXXXXXXXXXXXXXXX R E
                                                U                               E

                                Street:  OXXXXXXXXXXXXXXXXXXXXX

                                Zip Code / City:  C99999999 :XXXXXXXXXXXXX1E

Phone L Office:  OXXXXXXXXXXXXXXXXXXXXX
L Home:  :XXXXXXXXXXXXXXXXXXXXX
L Mobile:  :XXXXXXXXXXXXXXXXXXXXX

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help      Exit  Test  BoxDi --  -  +  Full  <  >  Let
    
```

### Example of Box Coding after ENTER

The example below shows how box coding can look after you confirm your box-code entries with ENTER:

```

                                O u t l i n e   E d i t o r
Code BX  Code BX  Code BX  Code BX  Code BX  Code BX  Code BX  Code BX
  T  _   B  _   I  _   C  _   1  _   3  _   5  _   U  _
001  L  |   R  |   H  |   O  |   2  |   4  |   6  |   E  END
    --010--+-+-----+--030--+-+-----+--050--+-+-----+--070--+-+-----+
                                BPersonalBInformation

                                First Name:  OXXXXXXXXXXXXXXXXXXXXX

                                Last Name:  2.....
                                                L:XXXXXXXXXXXXXXXXXXXXX R
                                                U.....

                                Street:  OXXXXXXXXXXXXXXXXXXXXX

                                Zip Code / City:  C99999999I.IXXXXXXXXXXXXX1

                                Phone L Office: OXXXXXXXXXXXXXXXXXXXXX
                                L Home:  :XXXXXXXXXXXXXXXXXXXXX
                                L Mobile: :XXXXXXXXXXXXXXXXXXXXX

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help      Exit  Test  BoxDi --  -  +      Full  <  >      Let

```

## Example of a Box Layout

The example below shows the box layout of a map when invoked by a program or with the PF4 test function.

```

      Personal Information

First Name:  ZZZZZZZZZZZZZZZZZZZZZ
Last Name:  FFFFFFFFFFFFFFFFFFFFFF
Street:     PFFFFFFFFFFFFFFFFFFFFF
Zip Code / City:  12345678  YYYYYYYYYYYYYYYYYY

Phone | Office:  12345678901234567890
      | Home:    12345678901234567890
      | Mobile:  12345678901234567890

```

The example is based on *Example of Box Code Setting*.

## Line Commands and PF Keys

The line commands and PF keys provided by the outline editor can be used to delete box codes and blank text fields, navigate in the editing area of the outline editor, switch editing areas (outline editor/map editor), change display modes or terminate the outline editor.

You enter a line command in the first position of a line. Line commands are not case-sensitive.

Line Command	PF Key	Explanation
. .D		Deletes all box codes and blank text fields in the line where the command is entered.
. .Dnn		Deletes all box codes and blank text fields in the line where the command is entered and <i>nn</i> lines below that line where <i>nn</i> denotes a range from 1 to 99.
. .D*		Deletes all box codes and blank text fields in the line where the command is entered and all lines below that line.
. .X	PF13	Switches between the editing area of the outline editor and the map editor.
	PF1	Help. Invokes help information about the outline editor and the map editor.
. .Q	PF3	Exit. Terminates the outline editor and returns to the <b>Edit Map</b> menu.  If pressed on the <b>Box-Code Display</b> or the test screen, returns to the editing area of the outline editor.
	PF4	Test. Tests the map definition with the box layout. This function can also be executed from the map editor.  Press PF3 or ENTER to return to the editing area.
	PF5	Box Display. Displays the box-code settings of a map: see <i>Box-Code Display</i> below.  Press PF3 or ENTER to return to the editing area.
	PF7	Scrolls up one page in the screen.
	PF8	Scrolls down one page in the screen.
	PF9	Switches between full-screen mode and split-screen mode.
	PF10	Moves to the left half of the screen if the map is wider than the screen.
	PF11	Moves to the right half of the screen if the map is wider than the screen.
	PF12	Undoes the last action performed in the editing area <i>before</i> ENTER is pressed.

## Box-Code Display

The box-code display function invokes the **Box-Code Display** screen, which is intended for orientation and helps distinguish box codes from text with identical characters.

The **Box-Code Display** screen shows the box codes set and indicates the field positions by a number of periods (.). The screen does not show the  $\text{E}$  entered for the end marker.

The box-code display screen cannot be used for editing.

**Example of a Box-Code Display:**

The following example shows the box code settings of a map after PF4 is pressed. The example is based on *Example of Box Code Setting*.

```

Outline Editor - Box-Code Display
Code BX Code BX Code BX Code BX Code BX Code BX Code BX Code BX
T  _  B  _  I  _  C  □  1  □  3  □  5  □  U  □
L  |  R  |  H  |  O  □  2  □  4  □  6  □  E  END
001  --010--+-----+-----030--+-----+-----050--+-----+-----070--+-----
      B.....B.....
      ..... O.....
      ..... 2.....
      ..... L..... R
      ..... U.....
      ..... O.....
      ..... C.....I.I.....1
..... L ..... O.....
      L .....
      L .....
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help           Exit
    
```