

# NAF - NTCC Table - Function 31.8

An NTCC table contains printer-specific control information that is used during printing.

This chapter covers the following topics:

- Invoking NTCC Table
- Selecting an NTCC Table from a List
- Maintaining an NTCC Table
- Maintaining User-Defined Attributes for All Printer Types
- Maintaining a Conversion Table
- Maintaining a Printer Type
- Restrictions

## Invoking NTCC Table

When you invoke this function, the **NTCC Table** window appears:

```

Time 15:06:07          *** Natural Spool Administration ***          Date 2002-10-21
User SAG                M e n u                File 7/411
                        +----- NTCC Table 7/411 -----+
Administration         !                               !
                        !   Enter name of           !
10 Reports/Queues      !                               !
11 Devices             !           NTCC Table           !
12 Abstracts          !                               !
13 Applications        !   or                               !
14 Change Spool File  !                               !
                        !   *   for Selection           !
                        !                               !
Maintenance           !   ?   for Help                   !
                        !                               !
30 Spool File Properties !   .   for End                       !
31 Objects            !                               !
32 Mass Update        !   -----                       !
33 Hardcopy Allocations !   /   _____   /               !
34 Transfer Objects   !                               !
                        +-----+-----+
Enter values.
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help Menu Exit User Logic Alloc Print Heade Appli Clust NTCC Canc

```

In this window, you can specify the name of an existing NTCC table, select an NTCC table from a list of NTCC tables available or add a new NTCC table to the spool file.

## Selecting an NTCC Table from a List

To select an NTCC table from a list, enter one of the following:

- a partly-qualified name (e.g. T\* to list all NTCC tables starting alphabetically from T),
- an asterisk (\*) to list all NTCC tables in the NATSPOOL system.

A list of NTCC tables is then shown in a window.

```

Time 15:06:45          *** Natural Spool Administration ***          Date 2002-10-21
User SAG              M e n u                                     File 7/411
                                                                +-----Select with *-----+
Administration        ! New start value .....          !
                                                                +-----+
10 Reports/Queues     ! Fl Cm Name          Fl Cm Name !
11 Devices            ! -- --              -- --      !
12 Abstracts         !   _  NAF            _  TEST1   !
13 Applications       !                      !
14 Change Spool File !                      !
                                                                +-----+
Maintenance           !                      !
                                                                +-----+
30 Spool File Properties !                      !
31 Objects           !                      !
32 Mass Update       !                      !
33 Hardcopy Allocations !                      !
34 Transfer Objects  !                      !
                                                                +-----+
Mark on selection list.
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      Help Menu Exit                               --                               Canc
    
```

P in the F1 (flag) column indicates that the NTCC table has been protected by its owner.

In the Cm column, you can enter one of the following codes:

Code	Description
C	Copy NTCC table.
D	Delete NTCC table.
R	Rename NTCC table.
.	Exit function.
X or any other character	Display NTCC table for modification or deletion, see below.

# Maintaining an NTCC Table

If the specified NTCC table exists, it is displayed. You can modify the individual parameters or delete the whole NTCC table.

**Note:**

If you specify a name that does not yet exist, you can add a new NTCC table. In this case, the Delete option is not provided in the window.

```

Time 15:07:41          *** Natural Spool Administration ***          Date 2002-10-21
User SAG                M e n u                File 7/411
+----- NTCC Table -----+
Administration          !  Modify                TESTPROF          !
                        !  Delete (Y/N)          N                  !
10 Reports/Queues       !  -----              !
11 Devices              !  Owner (Y/N) ..... N  !
12 Abstracts           !  -----              !
13 Applications         !  Maintenance           !
14 Change Spool File    !  - user-defined attributes (Y/N) N  !
                        !  - conversion table (Y/N)      N  !
                        !  -----              !
Maintenance            !  Notes                 !
                        !  _____            !
30 Spool File Properties !  _____            !
31 Objects              !  -----              !
32 Mass Update          !  Enter Printer Type    !
33 Hardcopy Allocations !  * for selection or    !
34 Transfer Objects     !  . for exit function   !
+-----+
Modify values, or press a PF-key.
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help Menu Exit                                     Canc
    
```

For each NTCC table, you can define different printer types. For each printer type, you can define standard attributes and/or user-defined attributes.

In the window above, you can specify the following:

- Whether you want to add or delete user-defined attributes that are valid for all printer types defined in the current NTCC table (Y/N).
- Whether you want to add or delete a conversion table for hexadecimal values that is valid for all printer types defined in the current NTCC table (Y/N).
- The name for a new printer type or of an existing printer type.

You can also enter an asterisk (\*) to select an existing printer type from a list. In the Cm column of the resulting window, you can then enter one of the following codes:

Code	Description
C	Copy printer type.
D	Delete printer type.
R	Rename printer type.
.	Exit function.
X or any other character	Display printer type for modification or deletion.

## Maintaining User-Defined Attributes for All Printer Types

User-defined attributes are freely defined strings that can be up to 10 bytes long. While printing, these strings are replaced with printer-specific control sequences.

When you specify Y to add or delete user-defined attributes that are valid for all printer types defined in the current NTCC table, the following screen appears:

```

Time 10:29:26          *** Natural Spool Administration ***          Date 2002-10-21
User SAG              M e n u                                     File 7/411
+-----User defined attributes for NTCC Table : TESTPROF-----+
!  _ #DEV#_____  - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
!  - - - - -      - - - - -  - - - - -  - - - - -  - - - - -  !
+-----+
Mark with function or press PF key
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit                                     Canc
    
```

You can define up to 60 user-defined attributes.

In the example above, #DEV# was defined as a user-defined attribute.

You can mark an attribute with one of the following codes:

Code	Description
D	Delete user-defined attribute.
.	Exit function.
X or any other character	Add/modify a note for this attribute in a window.

## Maintaining a Conversion Table

With the option Conversion Table, you can convert hexadecimal values by using the internal NAF conversion table.

If you choose this option, a screen similar to the one below appears:

```

Time 10:36:46          *** Natural Spool Administration ***          Date 2002-10-22
User SAG              Conversion Table for TESTPROF          File 7/411

      0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F
0  40 01 02 03 04 05 06 07 08 09 0A 0B 0C0D 0E 0F
1  10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F
2  20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F
3  30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F
4  40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F
5  50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F
6  60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F
7  70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 7F
8  80 81 82 83 84 85 86 87 88 89 8A 8B 8C 8D 8E 8F
9  90 91 92 93 94 95 96 97 98 99 9A 9B 9C 9D 9E 9F
A  A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 AA AB AC AD AE AF
B  B0 B1 B2 B3 B4 B5 B6 B7 B8 B9 BA BB BC BD BE BF
C  C0 C1 C2 C3 C4 C5 C6 C7 C8 C9 CA CB CC CD CE CF
D  D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 DA DB DC DD DE DF
E  E0 E1 E2 E3 E4 E5 E6 E7 E8 E9 EA EB EC ED EE EF
F  F0 F1 F2 F3 F4 F5 F6 F7 F8 F9 FA FB FC FD FE FF

Modify values.
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit  Reset                                     Canc
    
```

In the example above, the hexadecimal value 00 has been replaced by the hexadecimal value 40 in all lines of the report. You can specify a conversion table for an entire NTCC table, but also for further table specifications in order to define a special printer type. The table defining the printer type is then processed before the entire NTCC table.

**Note:**

The spool server interprets the hexadecimal values 0C, 0D and 15 as form feed, carriage return and line feed respectively. You cannot define any substitutes for these values. You can use these values for replacing other values. However, this can lead to undesirable side effects, such as unintended form feeds or line feeds.

# Maintaining a Printer Type

If the specified printer type exists, it is displayed. You can modify the individual parameters or delete the whole printer type.

**Note:**

If you specify a name that does not yet exist, you can add a new printer type. In this case, the Delete option is not provided in the window.

```

Time 15:11:52          *** Natural Spool Administration ***          Date 2002-10-21
User SAG              M e n u                                     File 7/411
                                                                +----- NTCC Table -----+
Administration          !  Modify                          TESTPROF          !
                        !  Printer Type                     PTYPE            !
10 Reports/Queues      !  Delete (Y/N)                      N                !
11 Devices             !  -----                          !
12 Abstracts           !  Replacement for ESCAPE (H'27')    #                !
13 Applications        !  !                                  !
14 Change Spool File  !  Notes                              !
                        !  _____                        !
                        !  _____                        !
Maintenance            !  -----                          !
                        !  Maintenance functions             !
30 Spool File Properties !  Standard attributes ..... _    !
31 Objects             !  User-defined attributes ..... _ !
32 Mass Update         !  Conversion table ..... _       !
33 Hardcopy Allocations !  !                                  !
34 Transfer Objects   !  Save and exit function ..... _ !
                                                                +-----+
Modify values, or press a PF-key.
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help Menu Exit                                           Canc
    
```

You can specify the following:

- A replacement character for the escape character (H' 27 ') which normally indicates a control sequence. This is helpful, since escape characters often corrupt a screen.
- Whether you want to define, modify or delete standard attributes for the current printer type. See below.
- Whether you want to modify the user-defined attributes for the current printer type.
- Whether you want to modify the conversion table for hexadecimal values that is valid for the current printer type.

Below is information on:

- Maintaining Standard Attributes
- Maintaining Standard Attribute Definitions

- Maintaining User-Defined Attributes for Current Printer Type

## Maintaining Standard Attributes

The standard attributes are the Natural attributes AD, BX, CD, OPEN and CLOSE.

The OPEN information is processed before the report is printed. It can consist of either text or control sequences (for example, to switch to landscape format). The CLOSE information is processed after the report has been printed and can also consist of text or control sequences.

When you choose to maintain the standard attributes that are valid for the current printer type, the following screen appears:

```

Time 10:29:26          *** Natural Spool Administration ***          Date 2002-10-21
User SAG              M e n u                                     File 7/411
                    +----- Standard Attributes -----+
Administration      !                                     !
                    !                                     !
10 Reports / Queues !   _  AD=U  +   _  AD=C   !
11 Devices          !   _  AD=I           _  AD=V   !
12 Abstracts       !                                     !
13 Applications    !   _  BX=L           _  BX=T   !
14 Change Spool File !   _  BX=R           _  BX=B   !
                    !                                     !
Maintenance        !   _  CD=NE          _  CD=YE   !
                    !   _  CD=TU          _  CD=GR   !
30 Spool File Properties !   _  CD=PI          _  CD=RE   !
31 Objects         !   _  CD=BL           !                                     !
32 Mass Update     !                                     !
33 Hardcopy Allocations !   _  OPEN  +   _  CLOSE  !
34 Transfer Objects !                                     !
                    !                                     !
                    +-----+
Mark with function or press PF key
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit                                     Canc
    
```

This screen contains all available attributes. A plus (+) sign next to an attribute indicates that an attribute definition has already been provided.

You can mark an attribute with one of the following codes:

Code	Description
D	Delete attribute definition.
X or any other character	Display attribute definition for modification, see below.

## Maintaining Standard Attribute Definitions

When you mark a standard attribute definition for modification or deletion, the following screen appears:

```

Time 11:03:29          *** Natural Spool Administration ***          Date 2002-10-21
User SAG              Standard Attributes AD=U                      File 7/411

Attribute P2UL        NTCC Table TESTPROF Printer Type PTYPE1      Save _
Replace character for ESCAPE #
Hexadecimal Format      On Sequence :<U:          Alphanumeric Format
-----
2711000000000000000000000000000000000000000000000000000 #?_____
0000000000000000000000000000000000000000000000000000000 _____
0000000000000000000000000000000000000000000000000000000 _____
0000000000000000000000000000000000000000000000000000000 _____
0000000000000000000000000000000000000000000000000000000 _____
Hexadecimal Format      Off Sequence :>U:          Alphanumeric Format
-----
2791000000000000000000000000000000000000000000000000000 #j_____
0000000000000000000000000000000000000000000000000000000 _____
0000000000000000000000000000000000000000000000000000000 _____
0000000000000000000000000000000000000000000000000000000 _____
0000000000000000000000000000000000000000000000000000000 _____
Notes .....
Mark with function or press PF key
Command==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit                                          Ca

```

The internal attribute name for the standard attribute is shown. In the example above, the internal name for AD=U (underscoring) is P2UL. The corresponding internal On and Off sequences are :<U: and :>U:.

The following table lists the Natural attributes and the corresponding internal On and Off sequences.



Natural Attribute	On Sequence	Off Sequence
AD=U	:<U:	:U>:
AD=C	:<C:	:C>:
AD=I	:<I:	:I>:
AD=V	:<V:	:V>:
BX=L	:<BL:	:BL>:
BX=T	:<BT:	:BT>:
BX=R	:<BR:	:BR>:
BX=B	:<BB:	:BB>:
CD=NE	:<N:	:N>:
CD=YE	:<Y:	:Y>:
CD=TU	:<T:	:T>:
CD=GR	:<G:	:G>:
CD=PI	:<P:	:P>:
CD=RE	:<R:	:R>:
CD=BL	:<B:	:B>:

The replacement character for the escape character (H' 27 ') that has been defined for the example above is a hash (#)

In the example above, the hexadecimal value 2711 is defined as the On sequence. This is the string which replaces the AD=U attribute when underscoring is switched on. As the Off sequence, the hexadecimal value 2791 is defined. This is the string which replaces the AD=U attribute when underscoring is switched off.

When you mark the OPEN or CLOSE attribute, the resulting screen is slightly different:

```

Time 15:35:18          *** Natural Spool Administration ***          Date 2002-10-21
User SAG                Standard Attribute                          File 7/411

Attribute OPEN          NTCC Table TESTPROF  Printer Type PTYPE1      Save _
Replace character for ESCAPE #

Hexadecimal Format          Alphanumeric Format
-----
C995A5968983850000000000000000000000000000000000000000000000000000 Invoice_____
000000000000000000000000000000000000000000000000000000000000000000 _____
000000000000000000000000000000000000000000000000000000000000000000 _____
000000000000000000000000000000000000000000000000000000000000000000 _____
000000000000000000000000000000000000000000000000000000000000000000 _____

OPEN          to be used as control sequence _
OPEN          to be used as text information *

Notes ..... _____

Mark with function or press PF key
Command==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit                               Canc
    
```

For the OPEN and CLOSE attributes, you can specify the following:

- A hexadecimal or alphanumeric value for a control sequence, or text that is to be used before (OPEN) or after (CLOSE) a report is printed.
- Whether the OPEN or CLOSE attribute is to be used as control sequence or text information. You can only mark one of the two options.

To save the new definition, mark the Save field.

### Maintaining User-Defined Attributes for Current Printer Type

When you choose to maintain the user-defined attributes that are valid for the current printer type, the following screen appears:

```

Time 11:04:56          *** Natural Spool Administration ***          Date 2002-10-21
User SAG              M e n u              File 7/411
+---User defined attributes for NTCC Table TESTPROF / PTYPE1-----+
Admini !  _ #DEV#                                           !
!                                                                 !
10 Rep !                                                                 !
11 Dev !                                                                 !
12 Abs !                                                                 !
13 App !                                                                 !
14 Cha !                                                                 !
!                                                                 !
Mainte !                                                                 !
!                                                                 !
30 Spo !                                                                 !
31 Obj !                                                                 !
32 Mas !                                                                 !
33 Har !                                                                 !
34 Tra !                                                                 !
!                                                                 !
+-----+
Modify values or press PF-Key.
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help Menu Exit                                           Canc
    
```

In the example above, #DEV# was defined as a user-defined attribute. This attribute was defined for all printer types in the NTCC table.

You can mark an attribute with one of the following codes:

Code	Description
D	Delete attribute definition.
X or any other character	Display attribute definition for modification, see below.

When you mark an attribute and press Enter, the following screen appears and you can modify the attribute definition for the current printer type.

```

Time 11:05:41          *** Natural Spool Administration ***          Date 2002-10-21
User SAG                User-defined Attribute                    File 7/411

Attribute #DEV#       NTCC Table TESTPROF  Printer Type PTYPE1          Save
-
Replace Character for ESCAPE #

Hexadecimal Format           Alphanumeric Format
-----
D3C1E2C5D940F1000000000000000000000000000000000000000000 LASER 1_____
00000000000000000000000000000000000000000000000000000000 _____
00000000000000000000000000000000000000000000000000000000 _____
00000000000000000000000000000000000000000000000000000000 _____
00000000000000000000000000000000000000000000000000000000 _____

Notes ..... Replacement for #DEV# for all printers with type PTYPE1

Command==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Menu  Exit                                     Canc

```

In the example above, the alphanumeric value LASER 1 was defined. While printing, the attribute #DEV# will be replaced with LASER 1.

**Example:**

This example explains how NTCC tables and reports work together.

The NTCC table TESTPROF contains the user-defined attribute #DEV# and printer types PTYPE1 and PTYPE2. For these printer types, the following definitions apply:

- PTYPE1: the user-defined attribute #DEV# will be replaced with LASER 1. The standard attribute AD=U will be replaced with the On sequence H' 2711 ' and the Off sequence H' 2791 ' . For the standard attribute OPEN, the text information "Invoice" was defined.
- PTYPE2: the user-defined attribute #DEV# will be replaced with INK 2. The standard attribute AD=U will be replaced with the On sequence H' 2714 ' and the Off sequence H'2794'.

There is a DEFINE PRINTER statement with the PROFILE parameter set to TESTPROF. Using the allocation DEST/A, this logical printer refers to the physical printers PRINTER1 and PRINTER2. For these physical printers, the following applies:

- For PRINTER1, PTYPE1 is defined as the printer type.
- For PRINTER2, PTYPE2 is defined as the printer type.

The WRITE statement contains the following:

```
'The' 'report' (AD=U) 'is printed on #DEV#'
```

This creates a report for the logical printer containing the following line:

```
The :U<:report:>U: is printed on #DEV#
```

When the report is output on the physical printer PRINTER1, the spool server recognizes the connection between the NTCC table TESTPROF (of the DEFINE PRINTER statement) and the printer type PTYPE1 (of the physical printer). The line above is then rendered as follows:

```
The H'2711'reportH'2791' is printed on LASER 1
```

which results in the following output:

```
Invoice  
The report is printed on LASER 1
```

When the same report is output on PRINTER2, the line above is rendered as follows:

```
The H'2714'totalH'2794' is printed on INK 2
```

which results in the following output:

```
The report is printed on INK 2
```

## Restrictions

If a report is created using an NTCC table defined in the NTCCTAB of the Natural parameter module, printer-specific replacement is not done by Natural Advanced Facilities. Replacement then occurs, as usual, when the report is created.

When the replacement is done by Natural Advanced Facilities and the required NTCC table with a printer type definition does not exist, the report cannot be printed and its status is set to MINT (missing NTCC table).

The assignment of the NTCC table of Natural Advanced Facilities can only be done dynamically by using the DEFINE PRINTER statement (PROFILE clause).