NAF - Printer - Function 31.4

# NAF - Printer - Function 31.4

One or more physical printers must be defined to NATSPOOL to indicate where reports are to be routed.

Besides general information, a physical printer describes technical data required to establish a connection. This information depends on the operating system: CICS, BS2000/OSD or IMS TM.

This chapter covers the following topics:

- Invoking Physical Printer
- Selecting a Physical Printer from a List
- Maintaining a Physical Printer

---

## Invoking Physical Printer

When you invoke this function, the Printer window appears:

```
Time 15:02:17        *** Natural Spool Administration ***      Date 2002-10-21
User SAG                               M e n u                 File 7/411
                                        +---------- Printer 7/411 ---------------+
        Administration                  !                                        !
                                        !  Enter name of                         !
        10 Reports / Queues             !                                        !
        11 Devices                      !       Printer                          !
        12 Abstracts                    !                                        !
        13 Applications                 !  or                                    !
        14 Change Spool File            !                                        !
                                        !      *    for Selection                !
        Maintenance                     !                                        !
                                        !      ?    for Help                     !
        30 Spool File Properties        !                                        !
        31 Objects                      !      .    for End                      !
        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       NTCC  Canc
```

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

## Selecting a Physical Printer from a List

To select a physical printer from a list, enter one of the following:

- a partly-qualified name (e.g. `D*` to list all physical printers starting alphabetically from D),
- an asterisk (*) to list all physical printers in the `NATSPOOL` system.

A list of physical printers is then shown in a window.

```
Time 15:23:06        *** Natural Spool Administration ***      Date 2002-10-21
User SAG                              M e n u                  File 7/411
                                    +-------------Select with D*-------------+
       Administration               !  New start value ......... _________   !
                                    !  ------------------------------------   !
       10 Reports / Queues          !  Fl Cm  Name        Fl Cm  Name         !
       11 Devices                   !  -- --  ---------   -- --  ---------    !
       12 Abstracts                 !      _  DAEPRTCA       _  DAEPRT10     !
       13 Applications              !   S  _  DAEPRT12       _  DAEPRT13     !
       14 Change Spool File         !      _  DAEPTR10       _  DAPERT13     !
                                    !      _  DEAPRTCA    S  _  DR1171       !
       Maintenance                  !   S  _  DR1490         _  HCTEST       !
                                    !      _  HHIPID         _  HUGO         !
       30 Spool File Properties     !      _  MK1            _  MK10         !
       31 Objects                   !      _  MK11           _  MK12         !
       32 Mass Update               !      _  MK13           _  MK2          !
       33 Hardcopy Allocations      !      _  MK3            _  MK4          !
       34 Transfer Objects          !      _  MK5            _  MK6          !
                                    !      _  MK7            _  MK8          !
                                    +-----------------------------------------+
 Mark on selection list.
 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help  Menu  Exit                    --   +                      Canc
```

The physical printer which was used for the initialization of the current Natural session is highlighted in the window.

The `Fl` (flag) column indicates the following:

| Flag | Description |
|---|---|
| P | Protected by administrator(s). |
| S | Physical printer is defined for usage by another operating/TP system. |

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

| Code | Description |
|---|---|
| C | Copy physical printer. |
| D | Delete physical printer. |
| R | Rename physical printer. |
| . | Exit function. |
| X or any other character | Display physical printer for modification or deletion, see below. |

# Maintaining a Physical Printer

If the specified physical printer exists, it is displayed. You can modify the form feed parameters or delete the whole physical printer.

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

```
Time 10:29:04        *** Natural Spool Administration ***      Date 2002-10-21
User SAG                           M e n u                     File 7/411
   +-------------------------------- Printer ---------------------------------+ +
   !  Modify                 DAEPRT10               Delete (Y/N)         N   ! !
   ! ------------------------------------------------------------------------   ! !
   ! Owner ........... N        Private printer N    Cluster ....   --       ! !
   ! ------------------------------------------------------------------------   ! !
   ! Standard profiles N                            Opsys/Tpsys  CICS____   ! !
   ! Statistics ...... N                                                    ! !
   !                                                                        ! +
   ! Check for form .. N    Initial form ________ / _  FF control B         ! !
   ! FF sequence ..... 0C00 LF sequence  1500          Sever exit ________  ! !
   !                                                                        ! !
   ! NTCC type  ...... _________                                            ! !
   ! ------------------------------------------------------------------------   ! !
   ! CICS System ID .. ____                                                 ! +
   ! ------------------------------------------------------------------------   ! !
   ! Notes                                                                  ! !
   !  ____________________________________________________________          ! !
   +------------------------------------------------------------------------+ +
 Enter values for the printer.
 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help  Menu  Exit  User  Logic Alloc Print Heade Appli       NTCC  Canc
```

**Note:**
The layout of the window above changes depending on the operating system specified.

The physical printer name must correspond to one of the following, according to the operating system used:

- the CICS Terminal ID, as specified in the CICS Terminal Control Table TCT; or
- it must be an IMS TM LTERM name; or
- the physical name (PDN) of a BS2000/OSD printer.

You can specify the following for all operating systems:

- Whether standard profiles are to be used (`Y/N`). When you add a physical printer, a logical printer and Destination/Form are automatically created. The names of the logical printer and destination correspond to the name of the physical printer. As a form name, `A` is provided. If you specify `N`, these objects are deleted.
- The operating system or TP monitor for which you define the printer. You can specify CICS, BS2000/OSD or IMS TM.
- Whether you require statistics (`Y/N`). If you specify `Y`, the number of pages, lines and reports for this allocation are collected and can be maintained by using Function 20. When `Y` is specified, an additional field appears (Add/modify time values). If you specify `Y` for this additional field and press Enter, the **Time Window** appears in which you can restrict this function to a user-defined time range.
- Whether the spool server is to check which form (Destination/Form) was printed on this physical device before (`Y/N`). If the form differs, printout is not started and a message is sent to the console. This check is not done under BS2000/OSD using system printers and for printers being accessed via a user application programming interface (API).
- The initial form to be used if `Check for form` is set to `Y`. If you do not specify an initial form and this flag is set to `Y`, the first printout will be started and the Destination/Form of this report will then be used.
- When a form feed is to be performed. This information is only evaluated at print time (not when the report is stored on the spool file). Enter one of the following values:

| Value | Description |
|---|---|
| `A` | Form feed at beginning and end. |
| `B` | Form feed at beginning only. |
| `E` | Form feed at end only. |
| `F` | Form feed at end only. (Leading form feed is ignored.) |
| `I` | No form feed at beginning and end. (Leading form feed is ignored.) |
| `N` | No form feed at beginning and end. |
| `T` | Transparent (no modifications). |

- Control sequences for the form feed and line feed.
- The type of printer if you work with printer-specific NTCC tables (see *Function 31.8* and the `DEFINE PRINTER` statement).

- The name of the subprogram that takes control in the spool server over each block sent to the printer. If you do not specify a name, control is passed to the user exit USPSER01. If you do not want a user exit to take control, enter *DUMMY.
- A description of the physical printer can be added in the `Notes` field.

All other fields in the screen depend on the operating system currently:

- Maintaining a Physical Printer under CICS
- Maintaining a Physical Printer under IMS TM
- Maintaining a Physical Printer under BS2000/OSD

## Maintaining a Physical Printer under CICS

```
Time 13:53:29        *** Natural Spool Administration ***      Date 2002-10-21
User SAG                          M e n u                      File 7/411
   +-------------------------------- Printer ---------------------------------+ +
   !  Modify                 DAEPRT10              Delete (Y/N)         N   ! !
   ! ------------------------------------------------------------------------   ! !
   ! Owner ........... N        Private printer N    Cluster ....   --       ! !
   ! ------------------------------------------------------------------------   ! !
   ! Standard profiles N                             Opsys/Tpsys  CICS____   ! !
   ! Statistics ...... N                                                     ! !
   !                                                                         ! +
   ! Check for form .. N    Initial form ________ / _  FF control B          ! !
   ! FF sequence ..... 0C00 LF sequence  1500          Sever exit ________   ! !
   !                                                                         ! !
   ! NTCC type  ...... ________                                              ! !
   ! ------------------------------------------------------------------------   ! !
   ! CICS System ID .. ____                                                  ! +
   ! ------------------------------------------------------------------------   ! !
   ! Notes                                                                   ! !
   !  ____________________________________________________________________       ! !
   +-------------------------------------------------------------------------+ +
 Enter values for the printer.
 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help  Menu  Exit  User  Logic Alloc Print Heade Appli       NTCC  Canc
```

A specific CICS system ID can be defined for each printer. If you do not specify a value, the value from the spool file options is used (see *Function 30.5*).

## Maintaining a Physical Printer under IMS TM

```
Time 14:05:10        *** Natural Spool Administration ***      Date 2002-10-21
User SAG                           M e n u                     File 7/411
   +-------------------------------- Printer ---------------------------------+ +
   !  Modify                 IMSPRI                 Delete (Y/N)         N   ! !
   ! ------------------------------------------------------------------------   ! !
   ! Owner ........... N        Private printer N    Cluster ....   --        ! !
   ! ------------------------------------------------------------------------   ! !
   ! Standard profiles N                            Opsys/Tpsys  IMS TM__    ! !
   ! Statistics ...... N                                                     ! !
   !                                                                         ! +
   ! Check for form .. N    Initial form ________ / _ FF control  B          ! !
   ! FF sequence ..... 0C00 LF sequence  1500         Server exit ________   ! !
   ! ------------------------------------------------------------------------   ! !
   ! Printer Type .... ________  SCS printer (Y/N) Y  Buffer size 1024       ! !
   ! ------------------------------------------------------------------------   ! !
   ! IMS BMP Transaction ID .. ________                                      ! +
   ! IMS BMP JCL Member ...... ________                                      ! !
   ! Notes                                                                   ! !
   !  ____________________________________________________________          ! !
   +-------------------------------------------------------------------------+ +
 Enter values for the printer.
 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help  Menu  Exit  User  Logic Alloc Print Heade Appli       NTCC  Canc
```

Report data are processed differently. Therefore, you must specify SCS printers by entering `Y` (yes) or `N` (no) in the field SCS Printer. In addition, in the Buffer Size field, enter the size of the buffer used by the blocks transferred to the physical printer. The buffer size is defined in bytes and must be in the range of `256` and `4048`.

BMP name and JCL member can be defined for each printer. If you do not specify any values, the values from the spool file options are used (see *Function 30.5*).

## Maintaining a Physical Printer under BS2000/OSD

```
Time 14:06:43        *** Natural Spool Administration ***      Date 2002-10-21
User SAG                           M e n u                     File 7/411
   +-------------------------------- Printer ---------------------------------+ +
   !  Modify               DR1171                   Delete (Y/N)         N   ! !
   ! ------------------------------------------------------------------------   ! !
   ! Owner ........... N   Private printer N          Opsys/Tpsys BS2000__   ! !
   ! ------------------------------------------------------------------------   ! !
   ! Standard profiles N    Statistics N                                        ! !
   ! Check form ...... N    Init. form  ________ / _  FF control  N            ! !
   ! FF sequence       0D0C LF sequence 0D15          Server Exit ________   ! !
   ! ------------------------------------------------------------------------   ! !
   ! User exit _____   NTCC type   _________  RSO (Y/N) N  RSO form ______    ! !
   ! ------------------------------------------------------------------------   ! !
   ! Protocol type     NEAR  Processor      VR3_____  Trace (Y/N)   N         ! !
   ! SEC. retry        20_   SEC. timeout   60___                              ! !
   ! Max.No. restarts   0    Buffer size    1920                              ! !
   ! Connection type   S     Message header *STD____  Cluster       --        ! !
   ! ------------------------------------------------------------------------   ! !
   ! Notes ____________________________________________________________________  ! !
   +------------------------------------------------------------------------+ +
 Enter values for the printer.
 Command ===>
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
       Help  Menu  Exit  User  Logic Alloc Print Heade Appli       NTCC  Canc
```

You can specify the following:

- The name of a user exit:

| User Exit | Description |
|---|---|
| EXIT1 | A user-written program gets control for each line of a report created for this physical printer. The control sequences for line feed and form feed are not modified. The program name for this type of exit is NAFEXIT1. |
| EXIT2 | A user-written program gets control for each block before it is send to the physical printer using the YSEND macro. The program name for this type of exit is NAFEXIT2. |
| EXIT3 | A user-written program gets control for all required functions (that is, open connection, start report, send data, close report, close connection). These functions must be executed by the user-written program. The program name for this type of exit is NAFEXIT3. |
| no specification | A user-written program will not be invoked. |

- Whether the SNI spool system RSO is to be used (Y/N).
- An RSO form parameter for printers that are controlled using the SNI spool system RSO. If you do not specify a parameter, the destination value from the allocation is used. It is also possible to define a value in the NAF parameter module which ignores all other values.

- A protocol type (NEAR or ISO).
- The name of the processor which controls the printers.
- Whether the trace option is to be activated (`Y/N`) to get information on the `DCAM` and `PRNT` macros that are executed for this physical printer. When activated, trace messages (that is, the functions, their return codes, the name of the physical printer, date and time) are written to the protocol file `SYSOUT`.
- The number of seconds after which the system tries to reestablish the connection to a printer. After 3 unsuccessful attempts, this is canceled.
- The spool server expects an acknowledgement for each message sent to a printer. You can specify the period in seconds after which a timeout is to occur.
- If the Restart option is active (see *Function 30.5*), you can specify the maximum number of restarts. When the maximum number is reached, the printer is deactivated for the spool server. Value `99` means that the number of restarts is unlimited. Value `0` means that there is no restart and that the printer will be set to `FREE` status.
- The buffer size, that is, the maximum size of a block that is sent to a printer. The maximum number is 4048 bytes.
- The connection types for physical printers that are accessed by DCAM calls. You can specify one of the following:

| Value | Description |
|---|---|
| `B` | Should be used for devices defined as bypass printers in the PDN definition. This is important for printers used as hardcopy devices. |
| `N` | Should be used for devices connected to directly to VR or to a MSF using the BAM protocol. |
| S | Should be used for devices connected to a MSN or an emulation. |
| P | Should be used to access a device or application (emulation) without modification to the data stream. |

- The name of a message header. See also *Function 31.A.*

### Example of Connection Type and Message Header:

The name of the message header is `D9001` and the connection type is `B`. The spool server looks for a message header named `D9001_ _ _B`. If this message header is not defined, the spool server uses the standard message header for the corresponding connection type: `*STD_ _ _ _N` (BAM) or `*STD_ _ _ _B` (bypass).

Standard values are used for bypass and BAM connections only. When a printer is accessed via `EXIT3` or is set to Connection Type `P`, the spool server searches for a correct message header. If a message header is not found, the data are processed without message header values.