



Speedware V7

Config Utility Guide

SPEEDWARE

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Preface

About this guide

This guide describes the Speedware Config Utility and explains how to use it. It is intended for developers who are creating or maintaining the configuration file for Speedware applications. Ideally, one person or a restricted group of software and/or hardware specialists should be responsible for the maintenance of the configuration file.

Version

This guide describes Version 7 of the Config Utility, updated for V7.08.

How to use this guide

Except for Chapter 1, this guide is not intended to be read from beginning to end. The main body of the guide is organized alphabetically, so that terms and topics can be found easily.

To find a specific term, use the [Contents](#), the [Index](#) or the Adobe search engine or indexes. Details about peripheral devices are in [Supported Devices](#). Answers to frequently asked questions may be found in [Troubleshooting](#).

Overview

Introduction

This guide describes the Speedware Config Utility, also called MAKECONF, and discusses the commands that it offers. The configuration file—default name, CONFIG—tells Speedware how to work with your terminals and printers. It contains compiled definitions of the operating characteristics of physical devices.

NOTE The standard CONFIG file is supplied by Speedware Corporation Inc. In most cases, you will not be required to update or maintain it.

However, if you need custom configurations such as forms, or if you want to add new types of terminals or printers, you may refer to this manual for detailed information.

Function of the Config Utility

The Speedware configuration file offers you, the application developer, hardware independence. The Config Utility creates and maintains the file that contains the printer, terminal and line drawing definitions required by Speedware applications.

The MAKECONF compiler

The MAKECONF compiler is the executable component of the Config Utility. The MAKECONF program can be run in order to:

- ❑ Access an existing configuration file
- ❑ Create a new, empty configuration file
- ❑ Process a text file to generate a configuration file.

For details, see [“Running the Config Utility”](#) on page 9.

Printer definitions

A printer definition must exist in the configuration file for every printer that can be used by a Speedware application. Printer definitions describe basic printer characteristics such as page size, print orientation, output device and fonts.

The configuration file lets you specify escape sequences to control printer functions available with Speedware applications.

Printer definitions are manipulated through the NEWPRINTER, ALTPRINTER and PURGEPRINTER commands.

NOTE We recommend that you adopt a naming convention—such as a special prefix—to clearly identify your customized printer definitions. If you ever need to call the Speedware Support Center, mention which printer, from the standard CONFIG, you used as a model.

Terminal definitions

A terminal definition must exist in the configuration file for every terminal that can be used by a Speedware application. Terminal definitions describe basic terminal characteristics such as colors and enhancements, cursor movement, window dimensions and function keys.

NOTE We recommend that you adopt a naming convention—such as a special prefix—to clearly identify your customized terminal definitions. If you ever need to call the Speedware Support Center, mention which terminal, from the standard CONFIG, you used as a model.

The configuration file lets you specify escape sequences that trigger all aspects of the terminal's behavior.

Terminal definitions are manipulated through the NEWTERMINAL, ALTTERMINAL and PURGETERMINAL commands.

Line drawing character set definitions

Line drawing character set definitions are used by printers and terminals defined in the configuration file. A line drawing character set includes all possible combinations of lines—single, double and large—and line intersections.

Line drawing character set definitions are manipulated through the NEWLINEDRAWING, ALTLINEDRAWING and PURGELINEDRAWING commands.

Classes of Config Utility commands

A Config Utility statement is composed of a command and its objects, options, and parameters, and is terminated by a semicolon. For details about command syntax, please see [“Syntax conventions”](#) in the Speedware/4GL Reference Manual. The types of Config Utility commands are:

NEW <i>etc</i>	To create new printer, terminal and line drawing character set definitions in the configuration file. These commands are prefixed NEW, such as NEWPRINTER.
ALT <i>etc</i>	To alter existing definitions of printer, terminal and line drawing character set definitions in the configuration file. These commands are prefixed ALT, such as ALTPRINTER.
LIST <i>etc</i>	To list the statements used in a configuration file. These commands can be displayed on the terminal, then printed and edited. The Config Utility can then use this edited file to generate a different configuration file. These commands are prefixed LIST, such as LISTPRINTER.
PURGE <i>etc</i>	To remove existing definitions of printer, terminal and line drawing character sets from the configuration file. These commands are prefixed PURGE, such as PURGEPRINTER.

How to use the Config Utility

The Config Utility allows you to add and maintain printer and terminal definitions, or to customize the basic CONFIG supplied by Speedware.

We strongly recommend that you write all modifications into an ASCII file and use the #INCLUDE pre-processor command to compile it with CONFIG. This way, you won't lose any details of your configuration when you receive an update to the standard CONFIG file (see [“Customizing your configuration”](#) on page 10 for a detailed procedure).

Running the Config Utility

You can run the Config Utility to create a new, empty configuration file or process an existing one.

Starting the Config Utility

To run the Config Utility, MAKECONF, use the appropriate run command for your operating system.

On MPE systems:

```
RUN MAKECONF.group.account;[INFO="-Ifilename -Bconfig"]  
RUN MAKECONF.PUB.SPEEDWRE;INFO="-IMYCONF -BNEWCONF"
```

On Windows platforms:

```
device\path\MAKECONF [-Ifilename -Bconfig]  
C:\SPEEDWRE\Pub\MAKECONF -IMYCONF -BNEWCONF
```

On UNIX systems:

```
path/makeconf [-Ifilename -Bconfig]  
path/Speedware/bin/makeconf -Imyconf -Bnewconf
```

NOTE The *-Ifilename* and *-Bconfig* run options tell MAKECONF to read an ASCII file of commands and output a new configuration file.

The process is simplified if a MAKECONF command file has been installed and initialized for the operating system. In this case, the Config Utility can be started by entering, at the operating system prompt:

```
MAKECONF or makeconf
```

The **Config>** prompt appears.

Opening an existing configuration file

To open an existing configuration file, enter its name and location (or path) at the **Config>** prompt. For example, on MPE:

```
CONFIG myconfig.group.account;  
or  
CONFIG myconfig;
```

Maintaining the configuration file

The recommended approach for maintaining your configuration file is to create a separate ASCII file that will hold:

- ❑ New terminal definitions
- ❑ New printer definitions
- ❑ Modifications to terminals or printers defined in the standard CONFIG.

NOTE Although the Config Utility lets you create your own configuration file, we strongly recommend that you keep the standard CONFIG as is and define any additional terminal or printer in a separate ASCII file as described below.

You should back up your initial CONFIG before attempting to modify it.

Customizing your configuration

To add or modify a terminal or printer definition to the configuration file:

1. Identify a printer or terminal whose definition is as close as possible to the one you want to define. For details about devices included in the current CONFIG file, please refer to [“Supported Devices”](#) on page 83.

NOTE If no printer seems to suit your needs, try using one of the STANDARD types. If everything else fails, call your Speedware Support Center.

2. Start the Config Utility and open your configuration file as described in [“Starting the Config Utility”](#) on page 9.
3. Using the LISTPRINTER or LISTTERMINAL command, list the output to a file, for example:

```
LISTPRINTER HPLASERJETII OUTPUT(FILE=PRINTERS);
```

NOTE To add more device definitions to an existing ASCII file, specify OUTPUT(APPEND = YES), for example:

```
LISTPRINTER HPLASERJETII OUTPUT(FILE=PRINTERS, APPEND=YES);
```

4. Using your favorite text editor or word processor, open the ASCII file and modify it as required. Refer to [“Config Reference”](#) on page 17 for a detailed description of the Config commands.
5. Make sure you save the file in ASCII format.
6. Open the standard CONFIG file and include the definitions stored in your customized ASCII file as follows:

```
CONFIG CONFIG;
#include PRINTERS; (* PRINTERS = ASCII file *)
```

7. Exit the Config Utility.

Your customized terminal or printer definitions are now compiled with the standard CONFIG definitions and can therefore be used by any of your Speedware applications.

Troubleshooting

If your new printer or terminal definition doesn't work as expected, check to make sure that the escape sequences or PostScript language instructions coded in the Config statements are accurate. If your syntax looks correct, refer to [“Troubleshooting”](#) on page 91 or call your Speedware Support Center for assistance.

Backing up your configuration file

As you update your configuration file, you will eventually accumulate a very detailed definition of your hardware components and the escape sequences needed to give precise instructions. As with any important stored information, it is essential to be able to regenerate this configuration file in the unfortunate event that it becomes lost or corrupted.

You should always make a backup copy of your customized configuration files. If you ever need to regenerate your configuration, you will be able to restore your special printer and terminal definitions and to include them in the basic CONFIG.

Documenting your configuration file

The Config Utility permits you to generate an ASCII text file containing MAKECONF statements for the printer and terminal definitions in the configuration file. A printout of the file lets you check details of its contents, and the file on disk lets you restore the CONFIG manually if necessary.

To document your configuration file, follow this procedure:

1. Run MAKECONF.
2. At the **Config>** prompt, execute the LISTCONFIG command, supplying a name for your output ASCII file by means of the OUTPUT option.

NOTE The ASCII file contains the basic CONFIG definitions with all the changes you've made, if any, plus any *included* definitions.

Creating a new configuration file

When the Config Utility is running interactively, the **Config>** prompt appears on each new line when the Utility is ready for a command. The BUILDCONFIG command creates a new configuration file:

```
BUILDCONFIG myconfig;
```

where *myconfig* is the name of the configuration file to be built. This new configuration file is empty and ready to accept definitions by reading an ASCII file of printer and terminal definitions or manually.

To input an ASCII file into a new configuration file, enter:

```
BUILDCONFIG myconfig;  
#INCLUDE ASCIIfile;
```

where *myconfig* is the name of the configuration file to be built and *ASCIIfile* contains the printer and terminal definitions for the new configuration file.

NOTE Although the Config Utility lets you create your own configuration file, we strongly recommend that you keep the standard CONFIG and define any additional terminal or printer in a separate ASCII file as described under ["Customizing your configuration"](#) on page 10.

Generating the configuration file

You can generate a configuration file manually:

- ❑ If no existing configuration file is available
- ❑ If a new CONFIG is required for any reason
- ❑ To add new printer or terminal definitions to an existing CONFIG
- ❑ To modify printer or terminal definitions in an existing CONFIG.

Manual generation can be done in batch mode or interactively.

Manual generation

In batch mode, the procedure is as follows:

1. Prepare an ASCII file containing the appropriate printer and terminal definitions.
2. Run MAKECONF, using the -I and -B parameters to read the ASCII file and generate the configuration file.

Interactive generation

In an interactive session, the Config Utility initializes a new configuration file with the BUILDCONFIG command.

In interactive mode, the procedure is:

1. Run MAKECONF.
2. At the **Config>** prompt, execute the BUILDCONFIG command, supplying a name for your new configuration file.
3. Type the *NEWetc* commands that define new printers and terminals to be created in your configuration file.
4. Alternatively, type the *ALTetc* commands that modify printers and terminals defined in your configuration file.

Upgrading your configuration file

When you upgrade to a new version of Speedware, or when you acquire a new printer or terminal, you will need an updated configuration file. You will also need to modify your configuration file if you plan to use the latest one supplied by Speedware.

To upgrade a configuration file and to carry over your customization, follow this procedure:

1. Run MAKECONF.
2. At the **Config>** prompt, enter:

```
CONFIG CONFIG;
```
3. For every customized file you want to include with the Speedware basic CONFIG, enter:

```
#INCLUDE filename;
```
4. Enter `EXIT;` to save your changes.

Interactive maintenance

You may also change the configuration file interactively. For a small number of changes, an interactive session can quickly update CONFIG so that developers can get on with coding and testing an application.

Follow this procedure:

1. Run MAKECONF.
2. At the **Config>** prompt, execute the CONFIG command, specifying the name of the configuration file to be altered.
3. Type the `ALTetc` or `NEWetc` commands to modify or create the appropriate printer or terminal definitions.
4. Enter `EXIT;` to save your changes and exit the Config Utility.

More details

For complete information on the Config Utility commands, options, and parameters, see [“Config Reference”](#) on page 17.

How Speedware handles printing

To successfully print a report from a Speedware application, you need to understand how Speedware/4GL interacts with the Config Utility when information is sent to the printer.

Speedware keeps printer information in several places, all of which are related:

- ❑ Configuration—The CONFIG defines all supported terminals and printers. You may have customized the basic CONFIG supplied by Speedware to add your own printer definitions.
- ❑ Profile—The PROFILE contains NEWPRINTER commands that identifies all printers used by your application. The printer TYPE links your application printer to its definition in the CONFIG.

The PROFILE also contains NEWUSER commands identifying all users of the application. The NEWUSER command lists all the printers available to a specific user in three categories: SYSTEM, LOCAL and PRIVATE.

- ❑ Spec file—PRINT verbs in the spec file generated by your application refer to a printer by its position in the SYSTEM, LOCAL or PRIVATE list.

DCLPRINTER verbs in the spec file declare a printer for local use in a Report section. The printer DEVICE refers to a printer in a SYSTEM, LOCAL or PRIVATE list, or to the window, default or slave printer.

At run time, Speedware chooses the appropriate printer based on the information specified at these different levels. It is the flexibility of this scheme that lets you set up your printers to suit your needs. For more information about printer handling in Speedware, please refer to the [Profile Utility Guide](#).

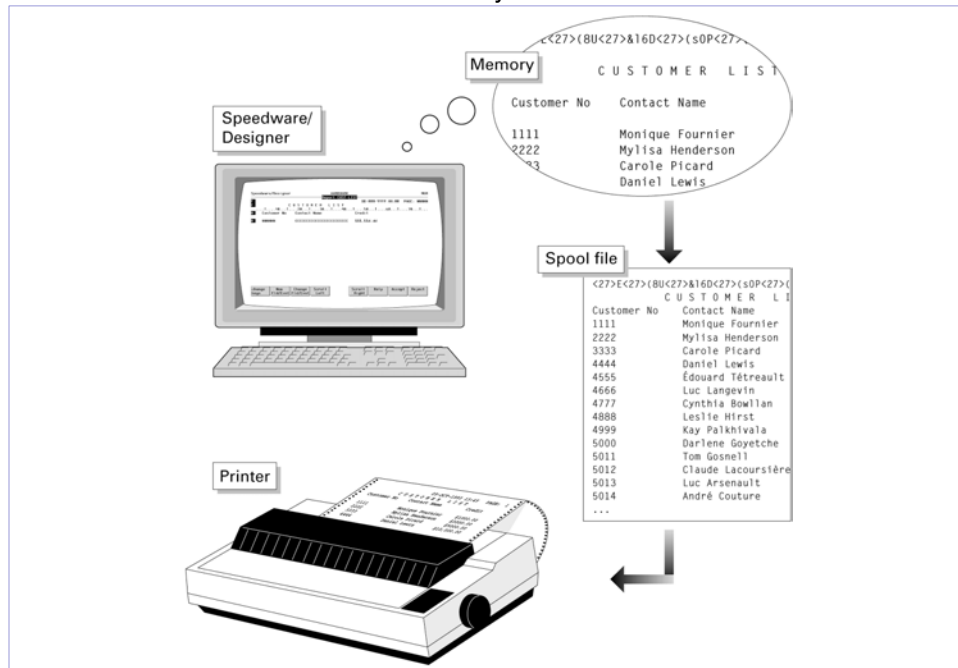
From Speedware to the spool file

To clarify the interaction between Speedware, the CONFIG file and the printer, let's use an example assuming that the operating system is MPE. See also "[Anatomy of the spool file](#)" on page 16, "[The spooler](#)" on page 94.

When you execute the report, Speedware interprets the Report section as follows:

1. It accesses and reads the file(s) specified by the FOR verbs.
2. It sorts the data if SORT verbs are specified.

3. It executes the PRINT statements and any AT events coded in the section.



Building the page in memory

The PRINT statements govern all output from a Speedware Report section. As the section is executed, Speedware builds a virtual page in memory according to the following rules:

1. Speedware defines the *page* in memory according to the page dimensions specified in the report definition.
2. Speedware matches the printer selected for the report to its corresponding printer type in the CONFIG.
3. Speedware checks the dimensions specified by the PAGE option.
4. Speedware checks the following settings of the ENVIRONMENT option (for details, see ["ENVIRONMENT option"](#) on page 42):
 - ❑ TYPE—whether to send escape sequences, PostScript or carriage-control commands to the printer.
 - ❑ DEVICE—whether output is sent to a file or printer.
 - ❑ CHARACTER-SET—which character set to use when outputting characters.
 - ❑ FORM-FEED—the character that must be sent to the printer to perform a form feed.
 - ❑ PERF-SKIP—whether Speedware should control form feed or let the printer handle it.
5. Speedware executes the SET statements, if any are specified in CONFIG, to set the printer to a known state before starting the print job. Depending on the ENVIRONMENT TYPE, these SET statements will send escape sequences, PostScript or carriage-control commands to the printer.
6. Speedware executes the PRINT statements or AT events as required.

7. When the virtual page is full, Speedware flushes all of its contents: data and formatting information, to the spool file.
8. Speedware starts building the next virtual page, repeating Steps 6 and 7 as often as necessary.
9. When it reaches the end of data for the report, Speedware executes the RESET statements, if any, to put the printer back to its default state, ready for another print request. This information is also flushed to the spool file along with the formatting information.

Anatomy of the spool file

Under MPE, a spool file is a temporary placeholder for formatted output waiting to be sent to a printer. As opposed to the virtual page in memory, the spool file contains the entire report output. Each page, as it is flushed from memory, is appended to the previous one, thus forming a long stream of data and formatting codes.

The report contents appear in their final format—as they will be output on the printed page—with escape sequences, or their equivalent, showing format details such as:

- ❑ Form feed characters
- ❑ Contents of SET and RESET statements
- ❑ Other escape sequences, if any were coded in the report.

The printed output

When the spool file is completed, that is, when the end of job is detected, the file is sent to the printer. If everything went well, the output matches exactly what you had in mind.

NOTE If you didn't get the expected results, check the spool file. For assistance, please refer to ["Troubleshooting"](#) on page 91.

Config Reference

Introduction

This chapter contains an alphabetical list of the commands, options and parameters used by the Config Utility.

ALTLINEDRAWING command

The ALTLINEDRAWING command alters the configuration attributes of an existing line drawing character set definition.

Syntax

```
ALTLINEDRAWING ldraw_ID
[CODE (parameters)];
```

Where

ldraw_ID is the name of the line drawing definition in the configuration file.

Operation

The ALTLINEDRAWING command modifies a line drawing definition in the configuration file.

Options and parameters

CODE Specifies graphic values:
CHAR000... CHAR255 character or string constant

NOTE For parameter details, see the CODE option.

Example

```
ALTLINEDRAWING PC8
CODE (
  CHAR000=" ",      "<196>", "<205>", "<205>",
  CHAR004="<179>",   "<191>", "<191>", "<191>",
  CHAR008="<186>",   "<191>", "<187>", "<187>",
  CHAR012="<186>",   "<191>", "<187>", "<187>",
  CHAR016="<196>",   "<196>", "<205>", "<205>",
  CHAR020="<218>",   "<194>", "<209>", "<209>",
  CHAR024="<218>",   "<210>", "<205>", "<210>",
  CHAR028="<218>",   "<210>", "<205>", "<205>",
  CHAR032="<205>",   "<205>", "<205>", "<205>",
  CHAR036="<218>",   "<209>", "<209>", "<209>",
  CHAR040="<201>",   "<203>", "<203>", "<203>",
  CHAR044="<201>",   "<205>", "<205>", "<205>",
  CHAR048="<205>",   "<205>", "<205>", "<205>",
  CHAR052="<218>",   "<209>", "<209>", "<209>",

  CHAR056="<201>",   "<203>", "<203>", "<203>",
  CHAR060="<201>",   "<205>", "<205>", "<203>",
  CHAR064="<179>",   "<217>", "<217>", "<217>",
  CHAR068="<179>",   "<180>", "<181>", "<181>",
  CHAR072="<186>",   "<185>", "<185>", "<185>",
  CHAR076="<186>",   "<185>", "<185>", "<185>",
  CHAR080="<192>",   "<193>", "<207>", "<207>",
  CHAR084="<195>",   "<197>", "<195>", "<197>",
  CHAR088="<199>",   "<197>", "<197>", "<197>",
  CHAR092="<195>",   "<197>", "<197>", "<197>",
  CHAR096="<192>",   "<207>", "<207>", "<207>",
  CHAR100="<198>",   "<197>", "<216>", "<206>",
  CHAR104="<204>",   "<206>", "<206>", "<206>",
  CHAR108="<204>",   "<206>", "<207>", "<206>",
  CHAR112="<192>",   "<193>", "<207>", "<207>",
  CHAR116="<198>",   "<197>", "<216>", "<216>",
```

```
CHAR120="<192>", "<206>", "<206>", "<207>",  
CHAR124="<204>", "<206>", "<206>", "<206>",  
CHAR128="<186>", "<217>", "<188>", "<188>",  
  
...  
CHAR200="<186>", "<185>", "<185>", "<186>",  
CHAR204="<186>", "<182>", "<185>", "<185>",  
CHAR208="<192>", "<208>", "<208>", "<208>",  
CHAR212="<199>", "<197>", "<197>", "<206>",  
  
CHAR216="<199>", "<215>", "<206>", "<206>",  
CHAR220="<199>", "<215>", "<206>", "<206>",  
CHAR224="<200>", "<205>", "<202>", "<202>",  
CHAR228="<204>", "<206>", "<206>", "<206>",  
CHAR232="<204>", "<206>", "<206>", "<206>",  
CHAR236="<204>", "<206>", "<206>", "<206>",  
CHAR240="<200>", "<206>", "<202>", "<202>",  
CHAR244="<204>", "<206>", "<206>", "<206>",  
CHAR248="<204>", "<206>", "<206>", "<206>",  
CHAR252="<204>", "<206>", "<206>", "<206>";
```

ALTPRINTER command

The ALTPRINTER command alters the configuration attributes of an existing printer definition.

Syntax

```
ALTPRINTER printer_ID
[COLOR (parameters)      ]
[ENVIRONMENT (parameters) ]
[FILE (parameters)       ]
[FONT (parameters)        ]
[LINE-DRAWING (parameters)]
[PAGE (parameters)        ]
[POSTSCRIPT (parameters)  ]
[RESET (parameters)       ]
[SET (parameters)         ];
```

Where

printer_ID is the printer name in the configuration file.

Operation

The ALTPRINTER command modifies one or more attributes of a printer definition in the configuration file.

COLOR	Defines or changes the color characteristics of the printer, if applicable: COLORYES or NO BLACK string constant RED string constant GREEN string constant YELLOW string constant BLUE string constant MAGENTA string constant CYAN string constant WHITE string constant
ENVIRONMENT	Defines basic characteristics of the printer: TYPE keyword DEVICE keyword CHARACTER-SET keyword RIGHT-TO-LEFT YES or NO NUM-SCRIPT ARABIC or HINDI FORM-FEED string constant PERF-SKIP YES or NO BLANK-LINES YES or NO OPTIONS string constant
FILE	Defines the file characteristics if the printer definition outputs to a file. LENGTH integer constant APPEND YES or NO RECORD-SIZE integer constant
FONT	Identifies the various character styles available with this printer definition: ITALIC string constant UNDERLINE string constant BOLD string constant

	LIGHT	string constant
	UNDER-BOLD	string constant
	ITALIC-LIGHT	string constant
	NORMAL	string constant
LINE-DRAWING	Specifies basic characteristics of the line drawing features available with this printer definition:	
	TYPE	<i>not applicable—terminals only</i>
	CODE	keyword
	ON	string constant
	OFF	string constant
PAGE	Specifies the dimensions of the output page:	
	LENGTH	integer constant
	WIDTH	integer constant
POSTSCRIPT	Specifies characteristics for postscript printers:	
	FONT	string constant
	SCALE-FONT	numeric expression
	LEADING	numeric expression
	TOP-MARGIN	numeric expression
	LEFT-MARGIN	numeric expression
RESET	Specifies escape sequences to be sent to the printer at the end of a print job:	
	RSTnn	string constant
SET	Specifies escape sequences to be sent to the printer at the beginning of a print job:	
	SETnn	string constant

Options and parameters (For details, see each option page)

Example

```

ALTPRINTER HPLASERJETII
  ENVIRONMENT (
    TYPE           =ESCAPE,
    DEVICE         =PRINTER,
    CHARACTER-SET=ROMAN8,
    FORM-FEED      ="<12>",
    PERF-SKIP      =NO,
    BLANK-LINES    =NO)

  FONT (
    ITALIC         ="<27>(s1S<27>(s0B<27>&d@",
    UNDERLINE      ="<27>(s0S<27>(s0B<27>&dD",
    BOLD           ="<27>(s0S<27>(s3B<27>&d@",
    LIGHT          ="<27>(s0S<27>(s-3B<27>&d@",
    UNDER-BOLD     ="<27>(s0S<27>(s3B<27>&dD",
    ITALIC-LIGHT   ="<27>(s1S<27>(s0B<27>&d@",
    NORMAL         ="<27>(s0S<27>(s-3B<27>&d@")

  LINE-DRAWING (
    CODE=PC8,
    ON  ="<27>(10U",
    OFF ="<27>(8U")

  PAGE (
    LENGTH=60,
    WIDTH =80)

  SET (
    SET00="<27>E",          (* Reset default *)
    SET02="<27>(8U",        (* Primary Symbol
                             Set = Roman-8 *)
    SET03="<27>&l00",        (* Portrait *)
    SET04="<27>&l6D",        (* 6 lpi *)
    SET05="<27>(s0P",       (* Fixed spacing *)
    SET06="<27>(s10H",      (* 10 cpi *)
    SET07="<27>(s12.0V",    (* 12 point *)
    SET08="<27>(s0s0b0T",  (* Style Upright *)
                             (* Weight Medium *)
                             (* Face LinePrinter *)
    SET09="<27>&l0L",      (* Disable Perf Skip *)
    SET11="<27>&k2G")

  RESET (
    RST00="<27>E");        (* Reset default *)

```

ALTTERMINAL command

The ALTTERMINAL command alters the configuration attributes of an existing terminal definition.

Syntax

```

ALTTERMINAL terminal_ID
    [ COLOR (parameters)          ]
    [ CONTROL (parameters)        ]
    [ CURSOR (parameters)          ]
    [ DIMENSION (parameters)      ]
    [ ENHANCEMENT (parameters)    ]
    [ FUNCTION-KEYS (parameters) ]
    [ INTERFACE (parameters)      ]
    [ LINE-DRAWING (parameters)   ]
    [ READ-MODE (parameters)      ]
    [ RESET (parameters)          ]
    [ SET (parameters)            ]
    [ SLAVE-PRINTER (parameters) ];

```

Where

terminal_ID is the terminal name in the configuration file.

Operation

The ALTTERMINAL command modifies one or more attributes of a terminal definition in the configuration file, such as colors, cursor movements, dimensions, enhancement attributes, functions keys, etc.

Options and parameters

COLOR	Defines or changes the color characteristics of the terminal, if applicable:
COLOR	YES or NO
BLACK	string constant
RED	string constant
GREEN	string constant
YELLOW	string constant
BLUE	string constant
MAGENTA	string constant
CYAN	string constant
WHITE	string constant
CONTROL	Defines basic characteristics of the terminal:
CLEAR-DISPLAY	string constant
CLEAR-TO-END	string constant
CLEAR-LINE	string constant
DELETE-LINE	string constant
INSERT-LINE	string constant
STEP-TAB	integer constant=
SET-TAB	string constant
DISPLAY-ON	string constant
DISPLAY-OFF	string constant
CURSOR	Defines cursor addressing:
TYPE	keyword
MOVE	string constant
DOWN	string constant

DIMENSION	Specifies screen dimensions: COLUMN integer constant MAX-COLUMN integer constant ROW integer constant ROW-WINDOW integer constant TITLE-ROW YES or NO SW-COLUMN string constant SW-MAX-COLUMN string constant
ENHANCEMENT	Specifies enhancements: TYPE keyword BLINK string constant UNDERLINE string constant INVERSE string constant HALFBRIGHT string constant UNDER-INV string constant HALF-INV string constant TERMINATE string constant
FUNCTION-KEYS	Specifies function key characteristics: TYPE keyword/string constant NUMBER integer constant LABEL-LENGTH integer constant FIRST-KEY integer constant ENABLE string constant
INTERFACE	Specifies the terminal's operating environment: TYPE keyword CHARACTER-SET keyword RIGHT-TO-LEFT YES or NO NUM-SCRIPT keyword
LINE-DRAWING	Specifies basic characteristics of the line drawing features available with this terminal definition: TYPE keyword CODE keyword ON string constant OFF string constant
READ-MODE	Specifies keyboard input: TYPE keyword START-ESCAPE string constant START-ESCAPE2 string constant CURSOR-UP string constant CURSOR-DOWN string constant CURSOR-RIGHT string constant CURSOR-LEFT string constant CURSOR-HOME string constant CURSOR-HOME2 string constant START-INSERT string constant START-INSERT2 string constant END-INSERT string constant TOGGLE-INSERT string constant DELETE-CHAR string constant DELETE-CHAR2 string constant CLEAR-TO-END string constant

	CLEAR-LINE	string constant
	DELETE-LINE	string constant
	INSERT-LINE	string constant
	F1	string constant
	F2	string constant
	F3	string constant
	F4	string constant
	F5	string constant
READ-MODE	<i>(Cont'd)</i>	
	F6	string constant
	F7	string constant
	F8	string constant
	PROTECTED	string constant
	UNPROTECTED	string constant
	XMIT-FNCT-ON	string constant
	XMIT-FNCT-OFF	string constant
	FORMAT-ON	string constant
	KBD-UNLOCK	string constant
	FORMAT-OFF	string constant
	KBD-LOCK	string constant
RESET	Specifies escape sequences to be sent to the terminal at the end of a Speedware session:	
	RST nn	string constant
SET	Specifies escape sequences to be sent to the terminal at the beginning of a Speedware session:	
	SET nn	string constant
SLAVE-PRINTER	Specifies the protocol to be used to communicate with a slave printer.	
	TYPE	keyword
	ON	string constant
	OFF	string constant
	(For details, see each option page)	

Example

```
ALTTERMINAL HPTerm-COLOR
  COLOR (
    COLOR  =YES,
    BLACK  ="<27>&V7s",
    RED    ="<27>&V1s",
    GREEN  ="<27>&V2s",
    YELLOW ="<27>&V3s",
    BLUE   ="<27>&V4s",
    MAGENTA="<27>&V5s",
    CYAN   ="<27>&V6s",
    WHITE  ="<27>&V0s")
  CONTROL (
    CLEAR-DISPLAY="<27>H<27>J",
    CLEAR-TO-END  ="<27>J",
    CLEAR-LINE    ="<27>K",
    DELETE-LINE   ="<27>M",
    INSERT-LINE   ="<27>L",
    STEP-TAB      =8,
    SET-TAB       ="<27>1")
  CURSOR (
    TYPE =HP,
    MOVE ="<27>&axxxcyR",
    DOWN ="<27>B")
  DIMENSION (
    COLUMN  =80,
    ROW     =24,
    ROW-WINDOW=21,
    TITLE-ROW =YES)
  ENHANCEMENT (
    TYPE      =POSITIONAL,
    BLINK     ="<27>&dA",
```

```
INVERSE      = "<27>&dB" ,
HALFBRIGHT= "<27>&dH" ,
UNDER-INV    = "<27>&dF" ,
HALF-INV     = "<27>&dN" ,
TERMINATE    = "<27>&d@" )

FUNCTION-KEYS (
    TYPE      =HP ,
    NUMBER    =8 ,
    LABEL-LENGTH=16 ,
    FIRST-KEY  =1 ,
    ENABLE     = "&jB" )

INTERFACE (
    TYPE      =ESCAPE ,
    CHARACTER-SET=ROMAN8 ,
    RIGHT-TO-LEFT=NO ,

    NUM-SCRIPT    =ARABIC )

LINE-DRAWING (
    TYPE=POSITIONAL ,
    CODE=HPEXTEND ,
    ON  = "<14>" ,
    OFF = "<15>" )

READ-MODE (
    TYPE=FORMAT ,
    START-ESCAPE  = "<27>" ,
    CURSOR-UP     = "A" ,
    CURSOR-DOWN   = "B" ,
    CURSOR-RIGHT  = "C" ,
    CURSOR-LEFT   = "D" ,
    CURSOR-HOME   = "H" ,
    CURSOR-HOME2  = "h" ,

    START-INSERT = "Q" ,
```

```
START-INSERT2="N",
END-INSERT    ="R",
DELETE-CHAR   ="P",
DELETE-CHAR2  ="O",
CLEAR-TO-END  ="J",
CLEAR-LINE    ="K",
DELETE-LINE   ="M",
INSERT-LINE   ="L",
F1            ="p",
F2            ="q",
F3            ="r",
F4            ="s",
F5            ="t",
F6            ="u",
F7            ="v",
F8            ="w",
PROTECTED     ="<27>]",
UNPROTECTED   ="<27>[",
XMIT-FNCT-ON  ="<27>&s1A",
XMIT-FNCT-OFF ="<27>s0A",
FORMAT-ON     ="<27>W",
FORMAT-OFF    ="<27>X",
KBD-LOCK      ="<27>c",
KBD-UNLOCK    ="<27>b")

SET (
    SET00="<27>3",
    SET01="<27>)B")

SLAVE-PRINTER (
    TYPE=HP,
    ON  ="<27>&p1p20C",
    OFF ="<13><10><1>");
```

BUILDCONFIG command

The BUILDCONFIG command creates a new, empty configuration file.

Syntax

```
BUILDCONFIG config ;
```

Where

config is the full pathname of the configuration file to be created.

Operation

BUILDCONFIG creates and opens a new, empty configuration file to which printer, terminal and line drawing definitions can be added. The definitions can be added interactively, or by reading in an ASCII file of definitions by means of the #INCLUDE pre-processor command.

BUILDCONFIG can be used only once for each configuration file, when that config is created. It requires a unique name for the new configuration file, and cannot be used with the name of an existing configuration file. See also [“Creating a new configuration file”](#) on page 11.

Restrictions

The maximum length of the configuration filename is determined by the operating system, and may include a path name.

On MPE systems:

```
BUILDCONFIG NEWCONF.CONFIG.SPEEDWRE ;
```

On UNIX systems:

```
BUILDCONFIG /speedwre/config/newconf ;
```

On MS-DOS, OS/2, Windows NT/95 systems:

```
BUILDCONFIG C:\SPEEDWRE\PUB\NEWCONF
```

CODE option

The CODE option specifies values for all possible combinations of graphic lines—single, double, or large—crossing each other. The combination of these 256 graphic characters makes up a line drawing character set.

Syntax

```
ALTLINEDRAWING | NEWLINEDRAWING ldraw_ID
CODE (CHARnnn=string,...);
```

Where

ldraw_ID is the name of the line drawing character set in the configuration file.
nnn is a number between 000 and 255.

Parameters

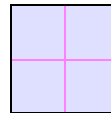
CODE CHAR000... CHAR255
 The corresponding graphic values. Maximum length = 1 character... or the ASCII code corresponding to the character in the format *<nnn>*.
 Default = Taken from ASCII code, for example CHAR065 = "A".

Operation

In the Config Utility, a line drawing character set is composed of 256 characters. The illustration on the next page shows how these line values are used, and explains how to interpret each CHAR*nnn* parameter.

Graphic characters

To help you understand how graphic characters are built, picture a square containing four lines joining the center with each one of the four sides.



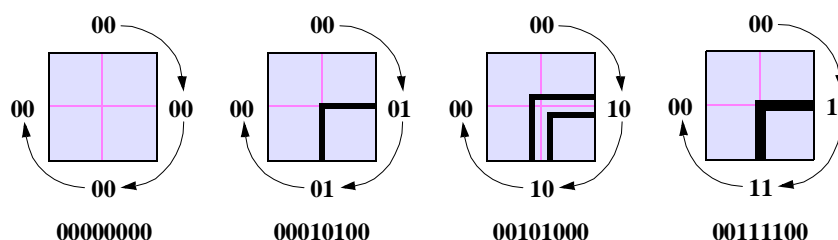
Each graphic character is a unique combination of the available line types within that graphic box.

The line type corresponds to a binary value. The four line types are:

- ❑ Invisible (value 00)
- ❑ Single (value 01)
- ❑ Double (value 10)
- ❑ Large (value 11).

The values for the lines in all four positions taken together make up a 8-bit binary number (1 byte). The value of this byte is different for each line combination. All the byte values make up a line drawing character set.

The illustration below is an example of using the upper-left corner graphic characters.



To obtain the binary representation of a graphic character, we read the line values clockwise, **starting from the top**:

- ❑ 00-00-00-00 (invisible line)
- ❑ 00-01-01-00 (single line)
- ❑ 00-10-10-00 (double line)
- ❑ 00-11-11-00 (large line).

Let's take a closer look at the single line example. The character in its binary representation reads 00010100, which corresponds to a decimal value of 20. Locate the CHAR020 parameter of the CODE option of the line drawing character set (PC8 in the example).

Example

```

ALTLINEDRAWING PC8
CODE (
    CHAR000=" ",      CHAR001="<196>",
    CHAR002="<205>",  CHAR003="<205>",
    CHAR004="<179>",  CHAR005="<191>",
    CHAR006="<191>",  CHAR007="<191>",
    CHAR008="<186>",  CHAR009="<191>",
    CHAR010="<187>",  CHAR011="<187>",
    CHAR012="<186>",  CHAR013="<191>",
    CHAR014="<187>",  CHAR015="<187>",
    CHAR016="<196>",  CHAR017="<196>",
    CHAR018="<205>",  CHAR019="<205>",
    CHAR020="<218>",  CHAR021="<194>",
    ...
    CHAR254="<206>",  CHAR255="<206>");

```

If you look up the ASCII character 218 in a PC-8 character set table, you see your upper-left corner! If you want to print a different character in place of the single-line upper-left corner, simply replace 218 with the desired ASCII character value.

Modifying a line drawing character set becomes easy once you understand the principles behind it.

The table on the next page summarizes the main characters you may be interested in.

Line styles

In the table below, all entries refer to single-line versions of the graphic characters. To locate the corresponding graphic character with a double line:

1. Replace all 01's with 10's, for example:

00010100 → 00101000

2. Compute the decimal value of the new number: 40.

NOTE Add 20 to the single-line version to get the decimal value for the double-line version; add 40 for the large-line version.

3. Locate the corresponding CHARnnn parameter in the line drawing character set:

CHAR040= "<201>"

4. Replace the ASCII value specified for that parameter with the ASCII value of the character you want to use or with the character itself—if alphanumeric.

Character representation

Parameter	Position	Decimal	ASCII	Displayed as...
CHAR000	00-00-00-00	0	0	space
CHAR001	00-00-00-01	1	196	├*
CHAR002	00-00-00-10	2	205	═*
CHAR003	00-00-00-11	3	205	═*†
CHAR004	00-00-01-00	4	179	┤*
CHAR005	00-00-01-01	5	191	┘
CHAR016	00-01-00-00	16	196	├*
CHAR017	00-01-00-01	17	196	├
CHAR020	00-01-01-00	20	218	┘
CHAR021	00-01-01-01	21	194	┘
CHAR064	01-00-00-00	64	179	┤*
CHAR065	01-00-00-01	65	217	┘
CHAR068	01-00-01-00	68	179	┤
CHAR069	01-00-01-01	69	180	┘
CHAR080	01-01-00-00	80	192	┤
CHAR081	01-01-00-01	81	193	├
CHAR084	01-01-01-00	84	195	┤
CHAR085	01-01-01-01	85	197	├

*Short lines not supported by this character set.

†Large lines not supported by this character set.

Example

```

ALTLINEDRAWING PC8
CODE(
  CHAR000=" ",      "<196>", "<205>", "<205>",
  CHAR004="<179>",   "<191>", "<191>", "<191>",
  CHAR008="<186>",   "<191>", "<187>", "<187>",
  CHAR012="<186>",   "<191>", "<187>", "<187>",
  CHAR016="<196>",   "<196>", "<205>", "<205>",
  CHAR020="<218>",   "<194>", "<209>", "<209>",
  CHAR024="<218>",   "<210>", "<205>", "<210>",
  CHAR028="<218>",   "<210>", "<205>", "<205>",
  CHAR032="<205>",   "<205>", "<205>", "<205>",
  CHAR036="<218>",   "<209>", "<209>", "<209>",
  CHAR040="<201>",   "<203>", "<203>", "<203>",
  CHAR044="<201>",   "<205>", "<205>", "<205>",
  CHAR048="<205>",   "<205>", "<205>", "<205>",
  CHAR052="<218>",   "<209>", "<209>", "<209>",
  CHAR056="<201>",   "<203>", "<203>", "<203>",
  CHAR060="<201>",   "<205>", "<205>", "<203>",
  CHAR064="<179>",   "<217>", "<217>", "<217>",
  CHAR068="<179>",   "<180>", "<181>", "<181>",
  CHAR072="<186>",   "<185>", "<185>", "<185>",
  CHAR076="<186>",   "<185>", "<185>", "<185>",
  ...
  CHAR252="<204>",   "<206>", "<206>", "<206>");

```

COLOR option

The COLOR option specifies the escape sequences necessary to select the colors on a terminal or printer.

Syntax

```
command identifier
    COLOR ( [ [COLOR=] YES|NO ]
           [, [BLACK=] string ]
           [, [RED=] string ]
           [, [GREEN=] string ]
           [, [YELLOW=] string ]
           [, [BLUE=] string ]
           [, [MAGENTA=] string ]
           [, [CYAN=] string ]
           [, [WHITE=] string ] )
    [option ...];
```

Where

command is the ALTPRINTER, ALTTERMINAL, NEWPRINTER or NEWTERMINAL command.

identifier is a printer or terminal definition.

option is any other option of the command.

Restrictions

The COLOR option is not available for printers with ENVIRONMENT (TYPE = POSTSCRIPT).

Parameters

COLOR Whether color is available with this printer or terminal: YES or NO
Default = NO.

BLACK, etc. The escape sequence that must be sent to the printer or terminal to select each color. Maximum length = 20.

Example

```
ALTTERMINAL ANSI
    COLOR (
        COLOR  =YES,
        BLACK  ="<27>[ 36m" ,
        RED    ="<27>[ 31m" ,
        GREEN  ="<27>[ 32m" ,
        YELLOW ="<27>[ 33m" ,
        BLUE   ="<27>[ 34m" ,
        MAGENTA="<27>[ 35m" ,
        CYAN   ="<27>[ 36m" ,
        WHITE  ="<27>[ 36m" );
```

NOTE On Windows environments, MAGENTA is mapped to the color GRAY: "<192><192><192>".

CONFIG command

The CONFIG command opens an existing configuration file for viewing or modification.

Syntax

```
CONFIG config;
```

Where

config is the location or path of an existing configuration file.

Operation

The CONFIG command opens an existing configuration so that operations to line drawing, printer and terminal definitions within it can be executed.

Restrictions

You must have exclusive access to an existing configuration file to view or modify its definitions. When the configuration file is open, other users cannot log on to applications using it.

On MPE systems:

```
CONFIG MYCONF.MYGROUP.MYACCT;
```

On UNIX systems:

```
CONFIG /users/accounts/myconfig;
```

On MS-DOS, OS/2 and Windows NT/95 systems:

```
CONFIG C:\USERS\ACCOUNTS\MYCONFIG;
```

CONTROL option

The CONTROL option specifies the escape sequences necessary to perform various actions on a terminal.

Syntax

```
command terminal_ID
    CONTROL ( [ [CLEAR-DISPLAY=] string ]
              [, [CLEAR-TO-END=] string ]
              [, [CLEAR-LINE=] string ]
              [, [DELETE-LINE=] string ]
              [, [INSERT-LINE=] string ]
              [, [STEP-TAB=] integer ]
              [, [SET-TAB=] string ]
              [, [DISPLAY-ON=] string ]
              [, [DISPLAY-OFF=] string ] )
    [option ...];
```

Where

command is the ALTTERMINAL or NEWTERMINAL command.
terminal_ID is a terminal definition.
option is any other option of the command.

Restrictions

The CONTROL option applies only to terminals whose INTERFACE (TYPE = ESCAPE).

Parameters

CLEAR-DISPLAY The escape sequence that must be sent to the terminal to clear the entire screen display. Maximum length = 20.

CLEAR-TO-END The escape sequence that must be sent to the terminal to clear the display from the cursor position to the bottom of the screen. Maximum length = 20.

CLEAR-LINE The escape sequence that must be sent to the terminal to clear the display from the cursor position to the end of the current line. Maximum length = 20.

DELETE-LINE The escape sequence that must be sent to the terminal to delete the current line. Maximum length = 20.

INSERT-LINE The escape sequence that must be sent to the terminal to insert a line above the current line. Maximum length = 20.

STEP-TAB The number of columns to skip between each tab marker. Default = 0.

SET-TAB The escape sequence that must be sent to the terminal to set a tab marker at the cursor position. Maximum length = 20.

DISPLAY-ON The escape sequence that must be sent to the terminal to turn the display on. Maximum length = 20.

DISPLAY-OFF The escape sequence that must be sent to the terminal to turn the display off. Maximum length = 20.

Example

```
ALTTERMINAL HPTERM
CONTROL (
    CLEAR-DISPLAY="<27>H<27>J",
    CLEAR-TO-END  ="<27>J",
    CLEAR-LINE    ="<27>K",
    DELETE-LINE   ="<27>M",
    INSERT-LINE   ="<27>L",
    STEP-TAB      =8,
    SET-TAB       ="<27>1",
    DISPLAY-ON    = " ",
    DISPLAY-OFF   = " " );
```

CURSOR option

The CURSOR option specifies the type of cursor addressing available on a terminal.

Syntax

```
command terminal_ID
  CURSOR ( [ [TYPE=] keyword]
           [, [MOVE=] string ]
           [, [DOWN=] string ] )
  [option ...];
```

Where

command is the ALTTERMINAL or NEWTERMINAL command.
terminal_ID is a terminal definition.
option is any other option of the command.

Restrictions

The CURSOR option applies only to terminals whose INTERFACE (TYPE = ESCAPE).

Parameters

TYPE[†] The type of cursor addressing determines how the row and column values are inserted in the MOVE pattern. Must be one of:

Keyword	Description
ANSI	Home coordinates = (1,1); row and column coordinates are expressed as a 2-digit ASCII value
DASHER	Home coordinates = (0,0); row and column coordinates are expressed as a 1-byte binary value
HAZELTINE	Their own table value
HP	Home coordinates = (0,0); row coordinates are expressed as a 2-digit ASCII value and column coordinates are expressed as a 3-digit ASCII value
IBM	Home coordinates = (0,0); row and column coordinates are expressed as a 1-byte binary value offset from <32> (space)
▶ IBM5250	Their own algorithm
MINITEL	Home coordinates = (0,0); row and column coordinates are expressed as a 1-byte binary value offset from <65> ("A")
TVI	Home coordinates = (0,0); row and column coordinates are expressed as a 1-byte binary value offset from <32> (space)
▶ VIEWDATA	Their own algorithm
VT	Home coordinates = (1,1); row and column coordinates are expressed as a 2-digit ASCII value
WYSE	Home coordinates = (1,1); row coordinates are expressed as a 2-digit ASCII value and column coordinates are expressed as a 3-digit ASCII value

Default = Blank, meaning not set.

MOVE The escape sequence that must be sent to the terminal to move the cursor to a specific position. Maximum length = 40.

DOWN The escape sequence that must be sent to the terminal to move the cursor to the next line, same column. Maximum length = 40.

†The MOVE parameter doesn't apply for types marked with an arrow (►). If you need assistance, please call your Speedware Support Center.

The escape sequence string sent with the MOVE parameter must follow a specific pattern. Please refer to the documentation accompanying your terminal for details. For example:

- ❑ "<27>&axxxcyR" On an HP terminal
- ❑ "<16>xy" On a DASHER terminal

Where

x, *xx*, or *xxx* is the position where the column coordinate of the escape sequence will be inserted.

y or *yy* is the position where the row coordinate of the escape sequence will be inserted.

Example

```
ALTTERMINAL HPTERM
  CURSOR (
    TYPE =HP ,
    MOVE ="<27>&axxxcyR" ,
    DOWN ="<27>B" ) ;
```

DIMENSION option

The DIMENSION option specifies default and maximum screen dimensions.

Syntax

```
command terminal_ID
  DIMENSION ( [ [COLUMN=] integer      ]
              [, [MAX-COLUMN=] integer ]
              [, [ROW=] integer        ]
              [, [ROW-WINDOW=] integer ]
              [, [TITLE-ROW=] YES|NO   ]
              [, [SW-COLUMN=] string    ]
              [, [SW-MAX-COLUMN=] string] )
  [option ...];
```

Where

command is the ALTTERMINAL or NEWTERMINAL command.
terminal_ID is a terminal definition.
option is any other option of the command.

Parameters

COLUMN The default number of columns on the screen. Maximum = 132. Default = 80.

MAX-COLUMN The maximum number of columns that can be displayed on the screen. Maximum = 132. Default = COLUMN.

ROW The default number of lines on the screen. Maximum = 70. Default = 25.

ROW-WINDOW The maximum number of lines on the screen dedicated to the window area, the remaining lines being used for the title line, the message line, the command line and, optionally, the function keys line(s). Default = 21.

TITLE-ROW Whether to print a title line at the bottom of the window area, that is, above the command line. YES or NO. Default = YES.

SW-COLUMN The escape sequence that must be sent to switch the number of columns of the display to the value of COLUMN. Maximum length = 20.

SW-MAX-COLUMN The escape sequence that must be sent to switch the number of columns of the display to the value of MAX-COLUMN. Maximum length = 20.

Example

```
ALTTERMINAL HPTERM
  DIMENSION (
    COLUMN      =80 ,
    ROW         =24 ,
    ROW-WINDOW=21 ,
    TITLE-ROW   =YES ) ;
```


ENHANCEMENT option

The ENHANCEMENT option specifies the way the terminal handles the display of enhancements.

Syntax

```

command terminal_ID
    ENHANCEMENT ( [ [TYPE=] keyword      ]
                  [, [BLINK=] string      ]
                  [, [UNDERLINE=] string  ]
                  [, [INVERSE=] string    ]
                  [, [HALFBRIGHT=] string]
                  [, [UNDER-INV=] string  ]
                  [, [HALF-INV=] string    ]
                  [, [TERMINATE=] string ] )
    [option ...];

```

Where

command is the ALTTERMINAL or NEWTERMINAL command.
terminal_ID is a terminal definition.
option is any other option of the command.

Parameters

TYPE The area of the terminal display that is affected when selecting an enhancement:

- ☐ ALTERNATIVE—the entire area is refreshed
- ☐ POSITIONAL—only the first character of the area is refreshed.

Default = POSITIONAL.

BLINK, etc. The escape sequence that must be sent to the terminal to select each enhancement. Maximum length = 20.

TERMINATE The escape sequence that must be sent to the terminal to terminate the effect of the selected enhancement. Maximum length = 20.

Example

```

ALTTERMINAL HPTERM
    ENHANCEMENT (
        TYPE      =POSITIONAL,
        BLINK      ="<27>&dA",
        UNDERLINE ="<27>&dD",
        INVERSE    ="<27>&dB",
        HALFBRIGHT ="<27>&dH",
        UNDER-INV  ="<27>&dF",
        HALF-INV   ="<27>&dN",
        TERMINATE  ="<27>&d@" );

```

ENVIRONMENT option

The ENVIRONMENT option specifies the printer's operating environment.

Syntax

```

command printer_ID
  ENVIRONMENT ( [ [TYPE=] keyword          ]
                [ , [DEVICE=] keyword      ]
                [ , [CHARACTER-SET=] keyword ]
                [ , [RIGHT-TO-LEFT=] YES|NO ]
                [ , [NUM-SCRIPT=] keyword  ]
                [ , [FORM-FEED=] string    ]
                [ , [PERF-SKIP=] YES|NO    ]
                [ , [BLANK-LINES=] YES|NO  ]
                [ , [OPTIONS=] string      ] )

[option ...];

```

Where

command is the ALTPRINTER or NEWPRINTER command.
printer_ID is a printer definition.
option is any other option of the command.

Parameters

TYPE The type of commands understood by the printer:

- ☐ ESCAPE—(default) printer responds to escape sequences
- ☐ POSTSCRIPT—printer understands PostScript language
- ☐ CARRIAGE-CTRL—printer responds to control commands in column 1

DEVICE The output device:

- ☐ DISC—output is sent to a file
- ☐ PRINTER—(default) output is sent directly to the printer.

CHARACTER-SET The character set used by the printer. The Config Utility supports the following character sets on the following platforms (✓ = supported, D = default).

Keyword	HP-UX	MPE	Win	AIX	Solaris
ARABIC8	✓	✓			
BIG5	✓		✓	✓	
Traditional Chinese					
EBCDIC1					
English default					
GB2312			✓		
Simplified Chinese					
GREEK8	✓	✓			
IBM850			✓	✓	
PC multilingual (code page 850)					
IBM932			✓	✓	
Japanese, Shift JIS					
IBMEUCCN				✓	
IBM Simpl. Chinese EUC					
IBMEUCKR				✓	
IBM Korean EUC					

Keyword	HP-UX	MPE	Win	AIX	Solaris
ISO	✓			D	
ISO 8859/1 Latin 1					
ISO2	✓				
ISO 8859/2 Latin 2 (Eastern Europe)					
ISO7				✓	
ISO 8859/7 Greek					

CHARACTER-SET

Keyword	HP-UX	MPE	Win	AIX	Solaris
ISO9				✓	
ISO 8859/9 Latin 5 (Turkish)					
JAPAN15	✓	✓			
KANA8	✓	✓			
HP KATAKANA8					
KOREA15	✓	✓			
KSC5601 (Korean standard code page)			✓		
PC8 Code page 437			✓		
PC8DN Danish/Norwegian (code page 865)			✓		
PCTURKISH					
PRC15 Simplified Chinese (Chinese-s)	✓	✓			
ROC15 Traditional Chinese (Chinese-t)	✓	✓			
ROMAN8	D	D			
TURKISH8	✓	✓			
USASCII 7 bits	✓	✓	✓	✓	✓

CHARACTER-SET

Keyword	HP-UX	MPE	Win	AIX	Solaris
WIN			D		
Latin 1 (ANSI)					
WIN2 Latin 2 (Eastern Europe)			✓		
WIN5 Latin 5 (Turkish)			✓		
WINGREEK Greek			✓		
Default=USASCII.					

RIGHT-TO-LEFT Whether the reading direction is from right to left as in Arabic languages or from left to right as in Latin languages. YES or NO
Default = NO, meaning left to right.

NUM-SCRIPT The numeric script in effect. ARABIC or HINDI. Default = ARABIC

- FORM-FEED** The escape sequence that must be sent to provoke a form feed. The moment at which the escape sequence is sent depends on the value of the PERF-SKIP parameter. Maximum length = 20. Default = Blank, meaning not set.
- PERF-SKIP** Whether the printer is configured such that an automatic page eject is performed when the end of page is reached. YES or NO. NO—the escape sequence specified by the FORM-FEED parameter is always sent to perform a form feed. YES—the escape sequence is sent only when the page length specified by the DCLPRINTER...
 ASSIGN(HEIGHT=*nn*,...) statement in the spec file is less than the page length in the PAGE(LENGTH=*nn*...) statement. If the value from the DCLPRINTER statement is greater than or equal to that of the PAGE statement, the escape sequence is not needed; an automatic form feed is performed by the printer anyway. Default = NO.
- BLANK-LINES** Whether blank lines appearing at the end of page should be kept. YES or NO. Default = YES. If set to NO, blank lines are removed and the form feed character is sent to the printer. If printed output is directed to a file and BLANK-LINES = NO, trailing blank lines at the end of each page are discarded. The page length in the file will therefore vary according to the number of lines actually used.
- OPTIONS** Platform-dependent options to be passed to the printer, for example "*-onb*" with the UNIX `lp` command. Maximum length = 20. Default = Blank, meaning not set.

Example

```
ALTPRINTER HPLASERJETII
  ENVIRONMENT (
    TYPE           =ESCAPE ,
    DEVICE         =PRINTER ,
    CHARACTER-SET=ROMAN8 ,
    RIGHT-TO-LEFT=NO ,
    NUM-SCRIPT     =ARABIC ,
    FORM-FEED      =" <12> " ,
    PERF-SKIP      =NO ,
    BLANK-LINES    =NO ) ;
```

EXIT command

The EXIT command terminates the Config Utility.

Syntax

```
EXIT;
```

Operation

After the EXIT command is accepted, the message “End of utility” appears, followed by the operating system prompt.

Example

```
EXIT;  
End of utility
```

FILE option

The FILE option specifies attributes that are relevant when the output is sent to disk instead of being printed directly.

Syntax

```
command printer_ID
  FILE ( [ [LENGTH=] integer      ]
        [ , [APPEND=] YES|NO      ]
        [ , [RECORD-SIZE=] integer] )
  [option ...];
```

Where

command is the ALTPRINTER or NEWPRINTER command.

printer_ID is a printer definition.

option is any other option of the command.

NOTE The value of the WIDTH parameter of the PAGE option, if it is greater than the value set for the RECORD-SIZE parameter, determines the maximum record size (see “PAGE option” on page 69).

Restrictions

The LENGTH and RECORD-SIZE parameters apply only to MPE platforms. MPE requires that you know the size of the file at creation time—specified by the LENGTH parameter—and supports fixed-length records.

Parameters

LENGTH	The size of the file in number of records. Default = 2000.
APPEND	Whether to append the output to the end of the file, if a file with the same name already exists. YES or NO. Default = YES.
RECORD-SIZE	The size, in number of characters, of each record in the file. If RECORD-SIZE is less than the PAGE(WIDTH) value, its value will be overridden. If RECORD-SIZE is greater than the PAGE(WIDTH) value, increase the PAGE(WIDTH) value so as to avoid truncation in your output. Default=0.

Example

```
NEWPRINTER FILE
  FILE (
    LENGTH=10000,
    APPEND=YES);
```

FONT option

The FONT option specifies the escape sequences that are necessary to select the current font.

Syntax

```

command printer_ID
    FONT ( [ [ITALIC=] string      ]
           [, [UNDERLINE=] string  ]
           [, [BOLD=] string       ]
           [, [LIGHT=] string      ]
           [, [UNDER-BOLD=] string ]
           [, [ITALIC-LIGHT=] string]
           [, [NORMAL=] string     ] )
    [ option ... ];

```

Where

command is the ALTPRINTER or NEWPRINTER command.
printer_ID is a printer definition.
option is any other option of the command.

Restrictions

The FONT option applies only to printers having ENVIRONMENT (TYPE = ESCAPE) or ENVIRONMENT (TYPE = CARRIAGE-CTRL).

Parameters

ITALIC, etc. The escape sequence that must be sent to the printer to select each font style or to select the default (NORMAL) style. Maximum length = 40.

Example

```

ALTPRINTER HPLASERJETII
    FONT (
        ITALIC      ="<27>(s1S<27>(s0B<27>&d@" ,
        UNDERLINE  ="<27>(s0S<27>(s0B<27>&dD" ,
        BOLD        ="<27>(s0S<27>(s3B<27>&d@" ,
        LIGHT       ="<27>(s0S<27>(s-3B<27>&d@" ,
        UNDER-BOLD ="<27>(s0S<27>(s3B<27>&dD" ,
        ITALIC-LIGHT="<27>(s1S<27>(s0B<27>&d@" ,
        NORMAL      ="<27>(s0S<27>(s-3B<27>&d@" );

```

FUNCTION-KEYS option

The FUNCTION-KEYS option specifies the way function keys are displayed on the terminal.

Syntax

```
command terminal_ID
    FUNCTION-KEYS ( [ [TYPE=] keyword          ]
                   [ ,[NUMBER=] integer        ]
                   [ ,[LABEL-LENGTH=] integer  ]
                   [ ,[FIRST-KEY=] integer     ]
                   [ ,[ENABLE=] string         ] )
    [option ...];
```

Where

command is the ALTTERMINAL or NEWTERMINAL command.
terminal_ID is a terminal definition.
option is any other option of the command.

VT420 terminals

On VT420 terminals, the range of function keys that Speedware may address is F6 to F13 (F1 through F5 are mapped to terminal functions like setup, print, etc.). In the default CONFIG file, VT420 terminals are set to FUNCTION-KEYS(FIRST-KEY=6).

Consequently, on VT420 terminals, the keyboard shortcut `>Fn` has a range of 6 to 13 rather than 1 to 8. The F-key range changes only for the end user; the end user types `>F6` to access F6. However, the programming functionality is the same as on other terminals. That is, in an INP `">Fn"` statement, *n* is always 1 to 8. For the VT420 entry point, code INP `">F1"` to access F6.

Parameters

TYPE	<p>The type of function key display:</p> <ul style="list-style-type: none"> <input type="checkbox"/> DRAWN—function keys appear at the bottom of the screen as eight blocks, boxed or not <input type="checkbox"/> DRAWN-LITERAL—function key labels appear at the bottom of the screen in one or two text lines <input type="checkbox"/> HP—HP function keys <input type="checkbox"/> IBM5250—IBM 5250 function keys <input type="checkbox"/> HPDRAWN <input type="checkbox"/> WYSE. <p>Default = Blank, meaning not set.</p>
------	--

NOTE To display function key labels:

- ☐ DRAWN and DRAWN-LITERAL types subtract two lines from the window area.
- ☐ WYSE type subtracts one line from the window area (see ["DIMENSION option"](#) on page 40 for more information).

NUMBER	The maximum number of function keys available. Maximum = 8. Default = 8.
--------	--

LABEL-LENGTH	The default length for the text to appear on the function keys. Maximum = 16. Default = 16.
--------------	---

FIRST-KEY	The number of the first active function key. Maximum = 24. Default = 1.
-----------	---

ENABLE The escape sequence that must be sent to enable function keys on the terminal. Maximum length = 20. Default = Blank, meaning not set.

Example

```
ALTTERMINAL VT420
  FUNCTION-KEYS (
    TYPE          =DRAWN-LITERAL,
    NUMBER        =8,
    LABEL-LENGTH=16,
    FIRST-KEY     =6);
```

HELP command

The HELP command displays a summary of the Config Utility commands, options and parameters.

Syntax

```
HELP [ command ] ;
```

Where

command is any Config Utility command with its options and parameters.

Operation

This command can be used during interactive sessions with the Config Utility. Enter it at the **Config>** prompt, either on its own (for help on every command), or with a command name for help on that command only.

Example

```
Config>HELP ALTTERMINAL;
Command      Options      ( Parameters )
-----
{ALT|NEW}TERMINAL <terminal_type>
                COLOR      ( COLOR= <YES|NO>,
                           BLACK= <string_constant>,
                           RED= <string_constant>,
                           GREEN= <string_constant>,
                           YELLOW= <string_constant>,
                           BLUE= <string_constant>,
                           MAGENTA= <string_constant>,
                           CYAN= <string_constant>,
                           WHITE= <string_constant>)
                CONTROL    ( CLEAR-DISPLAY= <string_constant>,
                           CLEAR-LINE= <string_constant>,
                           DELETE-LINE= <string_constant>,
                           INSERT-LINE= <string_constant>,
                           STEP-TAB= <string_constant>,
                           SET-TAB= <string_constant>,
                           DISPLAY-ON= <string_constant>,
                           DISPLAY-OFF= <string_constant>)
Press <Return> to continue or <E> to end :
```

#IFDEF, #IFNDEF commands

The pre-processor commands #IFDEF, #IFNDEF and #ENDIF selectively execute Config Utility statements depending on the operating platform.

Pre-processor commands—coded with the # (hashmark) in column 1—are executed separately from the Config Utility statements and operate only on the immediately following statement. These commands may be entered during interactive config processing, but cannot form part of the MAKECONF command.

Syntax

```
#IFDEF | #IFNDEF condition
    statements
#else
    statements
#endif
```

Where

condition is a conditional expression specifying the operating system.
statements is one or several statements to be executed depending on the evaluation of the condition.

NOTE Pre-processor commands used during interactive execution of the Config Utility must end with a semi-colon.

Operation

The #IFDEF, #IFNDEF, #ELSE, #ENDIF pre-processor command structure specifies a conditional expression that allows you to control platform-specific features of the terminal or printer. The keywords are:

MPEXL HPUX MSWINNT NTCONS

To specify a choice of operating systems, the Boolean operators || (or) and && (and) may be used. For example, to use any one of several operating systems:

```
#IFDEF MPEXL || HPUX || WINNT;
...
#endif;
```

NOTE Pre-processor commands can be inserted before an option within a command if required.

Example

```
ALTPRINTER HPLASERJETII
ENVIRONMENT (
    TYPE          =ESCAPE,
    DEVICE        =PRINTER,
    CHARACTER-SET=ROMAN8,
    FORM-FEED     ="<12>",
    PERF-SKIP     =NO,
    BLANK-LINES   =NO,
#ifdef HPUX
    OPTIONS       ="-onb"); (*Options of the
                           UNIX lp command *)
#else
    OPTIONS       =" ";
#endif
```

#INCLUDE command

The #INCLUDE pre-processor command executes Config Utility statements.

Pre-processor commands—coded with the # (hashmark) in column 1—are executed separately from the Config Utility statements.

Each pre-processor command used during interactive execution of the Config Utility must end with a semi-colon.

Syntax

```
#INCLUDE file;
```

Where

file is the name of a file to be read into the configuration file.

NOTE Pre-processor commands used during interactive execution of the Config Utility must end with a semi-colon.

Operation

The #INCLUDE pre-processor command inputs a file into the Config Utility. It offers the convenience of reading a prepared file instead of typing the commands interactively. The file used by #INCLUDE can be re-used.

For example, you might want to create customized printer definitions and store them in a separate ASCII file to improve access and maintainability. When you receive a new CONFIG file with a new release of Speedware, you simply have to add your customized device definitions to the configuration file by means of the #INCLUDE command.

Example

```
CONFIG CONFIG;  
#INCLUDE MYPRINTERS;
```

INTERFACE option

The INTERFACE option defines the terminal's operating environment.

Syntax

```
command terminal_ID
    INTERFACE ( [ [TYPE=] keyword          ]
               [ , [CHARACTER-SET=] keyword]
               [ , [RIGHT-TO-LEFT=] YES|NO ]
               [ , [NUM-SCRIPT=] keyword   ] )
    [option ...];
```

Where

command is the ALTTERMINAL or NEWTERMINAL command.
terminal_ID is a terminal definition.
option is any other option of the command.

Parameters

TYPE The type of interface used by the terminal:

- ☐ CURSES—CURSES package on UNIX
- ☐ ESCAPE—escape sequences
- ☐ MEMORY-MAPPED—memory mapping on micro computers
- ☐ MSWINDOWS—MS Windows™ interface
- ☐ VIO—VIO package on OS/2.

Default=ESCAPE.

CHARACTER-SET The character set used by the terminal. See the ENVIRONMENT option for a complete listing of supported character sets. Default = USASCII (EBCDIC on OS/400).

RIGHT-TO-LEFT Whether characters are read from right to left as for Arabic. YES or NO. Default = NO.

NUM-SCRIPT The numeric script in effect. ARABIC or HINDI. Default = ARABIC

Example

```
ALTTERMINAL HPTERM
    INTERFACE (
        TYPE           =ESCAPE,
        CHARACTER-SET=ROMAN8,
        RIGHT-TO-LEFT=NO,
        NUM-SCRIPT     =ARABIC);
```

LINE-DRAWING option

The LINE-DRAWING option describes how line drawing capabilities are implemented on the current device.

Syntax

```
command identifier
  LINE-DRAWING ( [ [TYPE=] keyword]
                 [ [CODE=] keyword]
                 [, [ON=] string ]
                 [, [OFF=] string ] )
  [option ...];
```

Where

command is the ALTPRINTER, ALTTERMINAL, NEWPRINTER or NEWTERMINAL command.

identifier is a printer or terminal definition.

option is any other option of the command.

Restrictions

The TYPE parameter does not apply to printers.

Parameters

TYPE	<p>The behavior of the line drawing on the terminal. The type determines the screen area affected by the line drawing:</p> <ul style="list-style-type: none"> ❑ ALTERNATIVE—the escape sequence must be sent to switch between character mode and line drawing mode. ❑ POSITIONAL—the escape sequence remains in effect on the screen. If graphic characters are output to the same position at a later time, the terminal <i>recognizes</i> them as graphic characters because the area already contains graphic characters. <p>Applies only to terminals and if ON and OFF are not blank. Default = POSITIONAL.</p>
CODE	<p>A valid line drawing character set defined in CONFIG:</p> <ul style="list-style-type: none"> ❑ ANK—Japanese character set ❑ ASCII—ASCII code; draws lines using +- ❑ ASIAN—Asian code ❑ DOT—Dot code; draws lines using: . ❑ HPEXTEND—HP code ❑ IBM7B—IBM code ❑ IBM8B—IBM code using 8 bits ❑ IBM850—corresponds to the IBM850 character set ❑ MINITEL—Minitel code ❑ PC8—corresponds to the PC8 character set ❑ QVT—QVT code ❑ TVI—TVI code ❑ VIEWDATA—VIEWDATA code ❑ WYSE—WYSE code. <p>Default = ASCII.</p>
ON	<p>The escape sequence that must be sent to invoke the alternate (line drawing) character set. Maximum length = 20.</p>

OFF The escape sequence that must be sent to invoke the base character set. Maximum length = 20.

Example

```
ALTERMINAL HPTERM
  LINE-DRAWING (
    TYPE=POSITIONAL,
    CODE=HPEXTEND,
    ON   ="<14>" ,
    OFF  ="<15>" ;
```

LISTALL command

The LISTALL command displays a complete list of any one type of config entity with its relevant attributes.

Syntax

```
LISTALL LINEDRAWINGS | PRINTERS | TERMINALS  
[OUTPUT (parameters)];
```

Operation

The LISTALL command lists all the statements that define one specified type of entity in the configuration file. If the OUTPUT option is not used, the listing is routed to the terminal.

Parameters

OUTPUT	Specifies the file to which output will be directed.
FILE	external filename
APPEND	YES or NO

NOTE For parameter details, see the OUTPUT option.

Example

```
LISTALL PRINTERS;
```


LISTCONFIG command

The LISTCONFIG command displays a complete list of the printers, terminals and line drawing character sets defined in the current configuration file.

Syntax

```
LISTCONFIG [OUTPUT (parameters)];
```

Operation

The LISTCONFIG command lists all the statements in the configuration file. If the OUTPUT option is not used, the listing is routed to the terminal.

Restrictions

On MPE platforms, the output file size has a maximum of 60,000 records and no limit on the number of extents. The maximum record length is 72.

Parameters

OUTPUT	Specifies the file to which output will be directed.
FILE	external filename
APPEND	YES or NO

NOTE For parameter details, see the OUTPUT option

Example

```
LISTCONFIG V702CONF;
```

LISTLINEDRAWING command

The LISTLINEDRAWING command displays all the attributes of a given line drawing character set defined in the current configuration file.

Syntax

```
LISTLINEDRAWING ldraw_ID  
[OUTPUT (parameters)];
```

Where

ldraw_ID is a line drawing definition in the configuration file.

Operation

The LISTLINEDRAWING command lists all line drawing definitions in the current configuration file.

If the OUTPUT option is used, this information can be written to an ASCII file, modified with a text editor and used as input to a new or rebuilt configuration file. If the option is not used, the listing is routed to the terminal.

Options and parameters

OUTPUT	Specifies the file to which output will be directed.
FILE	external filename
APPEND	YES or NO

NOTE For parameter details, see the OUTPUT option.

Example

```
LISTLINEDRAWING FAKE-LDRAW;
```

LISTPRINTER command

The LISTPRINTER command displays all the attributes of a given printer defined in the current configuration file.

Syntax

```
LISTPRINTER printer_ID  
[OUTPUT (parameters)];
```

Where

printer_ID is a printer definition in the configuration file.

Operation

The LISTPRINTER command lists all printer definitions in the current configuration file.

If the OUTPUT option is used, this information can be written to an ASCII file, modified with a text editor and used as input to a new or rebuilt configuration file. If the option is not used, the listing is routed to the terminal.

Options and parameters

OUTPUT	Specifies the file to which output will be directed.
FILE	external filename
APPEND	YES or NO

NOTE For parameter details, see the OUTPUT option.

Example

```
LISTCONFIG V702CONF;
```

LISTTERMINAL command

The LISTTERMINAL command displays all the attributes of a given terminal defined in the current configuration file.

Syntax

```
LISTTERMINAL terminal_ID  
[OUTPUT (parameters)] ;
```

Where

terminal_ID is a terminal definition in the configuration file.

Operation

The LISTTERMINAL command lists all terminal definitions in the current configuration file.

If the OUTPUT option is used, this information can be written to an ASCII file, modified with a text editor and used as input to a new or rebuilt configuration file. If the option is not used, the listing is routed to the terminal.

Options and parameters

OUTPUT	Specifies the file to which output will be directed.
FILE	external filename
APPEND	YES or NO

NOTE For parameter details, see the OUTPUT option.

Example

```
LISTTERMINAL DEMO-TERM  
OUTPUT ( FILE=MYTERMS , APPEND=YES ) ;
```

NEWLINEDRAWING command

The NEWLINEDRAWING command creates a new line drawing character set definition in the configuration file.

Syntax

```
NEWLINEDRAWING ldraw_ID  
CODE (parameters);
```

Where

ldraw_ID is an arbitrary name assigned to the line drawing definition in the configuration file.

Operation

The NEWLINEDRAWING command creates a new line drawing definition in the current configuration file.

Options and parameters

For a detailed description of the NEWLINEDRAWING options, please refer to [“ALTLINEDRAWING command”](#) on page 18.

Example

```

NEWLINEDRAWING PC8
CODE(
  CHAR000=" ",      "<196>", "<205>", "<205>",
  CHAR004="<179>",   "<191>", "<191>", "<191>",
  CHAR008="<186>",   "<191>", "<187>", "<187>",
  CHAR012="<186>",   "<191>", "<187>", "<187>",
  CHAR016="<196>",   "<196>", "<205>", "<205>",
  CHAR020="<218>",   "<194>", "<209>", "<209>",
  CHAR024="<218>",   "<210>", "<205>", "<210>",
  CHAR028="<218>",   "<210>", "<205>", "<205>",
  CHAR032="<205>",   "<205>", "<205>", "<205>",
  CHAR036="<218>",   "<209>", "<209>", "<209>",
  CHAR040="<201>",   "<203>", "<203>", "<203>",
  CHAR044="<201>",   "<205>", "<205>", "<205>",
  CHAR048="<205>",   "<205>", "<205>", "<205>",
  CHAR052="<218>",   "<209>", "<209>", "<209>",
  CHAR056="<201>",   "<203>", "<203>", "<203>",
  CHAR060="<201>",   "<205>", "<205>", "<203>",
  CHAR064="<179>",   "<217>", "<217>", "<217>",
  CHAR068="<179>",   "<180>", "<181>", "<181>",
  CHAR072="<186>",   "<185>", "<185>", "<185>",
  CHAR076="<186>",   "<185>", "<185>", "<185>",
  CHAR080="<192>",   "<193>", "<207>", "<207>",
  CHAR084="<195>",   "<197>", "<195>", "<197>",
  CHAR088="<199>",   "<197>", "<197>", "<197>",
  CHAR092="<195>",   "<197>", "<197>", "<197>",
  CHAR096="<192>",   "<207>", "<207>", "<207>",
  CHAR100="<198>",   "<197>", "<216>", "<206>",
  CHAR104="<204>",   "<206>", "<206>", "<206>",
  CHAR108="<204>",   "<206>", "<207>", "<206>",
  CHAR112="<192>",   "<193>", "<207>", "<207>",
  CHAR116="<198>",   "<197>", "<216>", "<216>",
  CHAR120="<192>",   "<206>", "<206>", "<207>",
  CHAR124="<204>",   "<206>", "<206>", "<206>",
  CHAR128="<186>",   "<217>", "<188>", "<188>",
  . . .
  CHAR200="<186>",   "<185>", "<185>", "<186>",
  CHAR204="<186>",   "<182>", "<185>", "<185>",
  CHAR208="<192>",   "<208>", "<208>", "<208>",
  CHAR212="<199>",   "<197>", "<197>", "<206>",
  CHAR216="<199>",   "<215>", "<206>", "<206>",
  CHAR220="<199>",   "<215>", "<206>", "<206>",
  CHAR224="<200>",   "<205>", "<202>", "<202>",
  CHAR228="<204>",   "<206>", "<206>", "<206>",
  CHAR232="<204>",   "<206>", "<206>", "<206>",
  CHAR236="<204>",   "<206>", "<206>", "<206>",
  CHAR240="<200>",   "<206>", "<202>", "<202>",
  CHAR244="<204>",   "<206>", "<206>", "<206>",
  CHAR248="<204>",   "<206>", "<206>", "<206>",
  CHAR252="<204>",   "<206>", "<206>", "<206>",
  CHAR256="<204>",   "<206>", "<206>", "<206>");

```

NEWPRINTER command

The NEWPRINTER command creates a new printer definition in the configuration file.

Syntax

```
NEWPRINTER printer_ID
[ COLOR(parameters)      ]
[ ENVIRONMENT(parameters) ]
[ FILE(parameters)       ]
[ FONT(parameters)       ]
[ LINE-DRAWING(parameters) ]
[ PAGE(parameters)       ]
[ POSTSCRIPT(parameters) ]
[ RESET(parameters)      ]
[ SET(parameters)        ];
```

Where

printer_ID is an arbitrary name assigned to the printer definition in the configuration file.

Operation

The options of the NEWPRINTER command that may be customized depend on the value of the ENVIRONMENT TYPE:

❑ ESCAPE:

```
... ENVIRONMENT (FORM-FEED=string)
... ENVIRONMENT (PERF-SKIP=YES|NO)
... LINE-DRAWING (CODE=string)
... PAGE (LENGTH=integer)
```

❑ POSTSCRIPT:

```
... POSTSCRIPT (FONT=string)
... LINE-DRAWING (CODE=string)
... PAGE (LENGTH=integer)
```

❑ CARRIAGE-CTRL:

```
... LINE-DRAWING (CODE=string)
... PAGE (LENGTH=integer)
```

Options and parameters

For a detailed description of the NEWPRINTER options, please refer to “[ALTPRINTER command](#)” on page 20.

Example

```

NEWPRINTER COLOR-LASER
  ENVIRONMENT (
    TYPE          =ESCAPE,
    DEVICE        =PRINTER,
    CHARACTER-SET=ROMAN8,
    FORM-FEED     ="<12>",
    PERF-SKIP     =NO,
    BLANK-LINES   =NO)

  FONT (
    ITALIC        ="<27>(s1S<27>(s0B<27>&d@",
    UNDERLINE    ="<27>(s0S<27>(s0B<27>&dD",
    BOLD          ="<27>(s0S<27>(s3B<27>&d@",
    LIGHT         ="<27>(s0S<27>(s-3B<27>&d@",
    UNDER-BOLD   ="<27>(s0S<27>(s3B<27>&dD",
    ITALIC-LIGHT ="<27>(s1S<27>(s0B<27>&d@",
    NORMAL        ="<27>(s0S<27>(s-3B<27>&d@")

  LINE-DRAWING (
    CODE=PC8,
    ON   ="<27>(10U",
    OFF  ="<27>(8U")

  PAGE (
    LENGTH=60,
    WIDTH =80)

  SET (
    SET00="<27>E",          (* Reset default *)
    SET02="<27>(8U",        (* Roman-8 *)
    SET03="<27>&l00",        (* Portrait *)
    SET04="<27>&l6D",        (* 6 lpi *)
    SET05="<27>(s0P",       (* Fixed spacing *)
    SET06="<27>(s10H",      (* 10 cpi *)
    SET07="<27>(s12.0V",    (* 12 point *)
    SET08="<27>(s0s0b0T",   (* Style Upright *)
                                (* Weight Medium *)
                                (* Face LinePrinter *)
    SET09="<27>&l0L")        (* Disable Perf Skip *)

  RESET (
    RST00="<27>E");        (* Reset default *)

```


NEWTERMINAL command

The NEWTERMINAL command creates a new terminal definition in the configuration file.

Syntax

```
NEWTERMINAL terminal_ID
[COLOR (parameters)      ]
[CONTROL (parameters)    ]
[CURSOR (parameters)      ]
[DIMENSION (parameters)  ]
[ENHANCEMENT (parameters) ]
[FUNCTION-KEYS (parameters)]
[INTERFACE (parameters)  ]
[LINE-DRAWING (parameters) ]
[READ-MODE (parameters)   ]
[RESET (parameters)       ]
[SET (parameters)         ]
[SLAVE-PRINTER (parameters)];
```

Where

terminal_ID is an arbitrary name assigned to the terminal definition in the configuration file.

Options and parameters

For a detailed description of the NEWTERMINAL options, please refer to [“ALTTERMINAL command”](#) on page 23.

Example

```
NEWTERMINAL DEMO-TERM
CONTROL (
    CLEAR-DISPLAY="<27>H<27>J",
    CLEAR-TO-END  ="<27>J",
    CLEAR-LINE    ="<27>K",
    DELETE-LINE   ="<27>M",
    INSERT-LINE   ="<27>L",
    STEP-TAB      =8,
    SET-TAB       ="<27>1")
CURSOR (
    TYPE =HP,
    MOVE ="<27>&axxxcyyR",
    DOWN ="<27>B")
DIMENSION (
    COLUMN      =80,
    ROW         =24,
    ROW-WINDOW=21,
    TITLE-ROW   =YES)
ENHANCEMENT (
    TYPE        =POSITIONAL,
    BLINK        ="<27>&dA",
    UNDERLINE   ="<27>&dD",
    INVERSE      ="<27>&dB",
    HALFBRIGHT  ="<27>&dH",
    UNDER-INV   ="<27>&dF",
    HALF-INV     ="<27>&dN",
    TERMINATE    ="<27>&d@")
FUNCTION-KEYS (
    TYPE        =HP,
    NUMBER       =8,
    LABEL-LENGTH=16,
    FIRST-KEY    =1,
```

```

        ENABLE          ="&jB"
INTERFACE (
    TYPE                =ESCAPE,
    CHARACTER-SET=ROMAN8,
    RIGHT-TO-LEFT=YES,
    NUM-SCRIPT          =ARABIC)
LINE-DRAWING (
    TYPE=POSITIONAL,
    CODE=HPEXTEND,
    ON  ="<14>",
    OFF ="<15>" )
READ-MODE (
    TYPE                =FORMAT,
    START-ESCAPE       ="<27>" ,
    CURSOR-UP          ="A" ,
    CURSOR-DOWN        ="B" ,
    CURSOR-RIGHT       ="C" ,
    CURSOR-LEFT        ="D" ,
    CURSOR-HOME        ="H" ,
    CURSOR-HOME2       ="h" ,
    START-INSERT       ="Q" ,
    START-INSERT2      ="N" ,
    END-INSERT         ="R" ,
    DELETE-CHAR        ="P" ,
    DELETE-CHAR2       ="O" ,
    CLEAR-TO-END       ="J" ,
    CLEAR-LINE         ="K" ,
    DELETE-LINE        ="M" ,
    INSERT-LINE        ="L" ,
    F1                 ="p" ,
    F2                 ="q" ,
    F3                 ="r" ,
    F4                 ="s" ,
    F5                 ="t" ,
    F6                 ="u" ,
    F7                 ="v" ,
    F8                 ="w" ,
    PROTECTED          ="<27>]" ,
    UNPROTECTED        ="<27>[" ,
    XMIT-FNCT-ON       ="<27>&s1A" ,
    XMIT-FNCT-OFF      ="<27>s0A" ,
    FORMAT-ON          ="<27>W" ,
    FORMAT-OFF         ="<27>X" ,
    KBD-LOCK           ="<27>c" ,
    KBD-UNLOCK         ="<27>b" )
RESET (
    RSTnn=string,...)
SET (
    SET00="<27>3" ,
    SET01="<27>)B" )
SLAVE-PRINTER (
    TYPE=HP,
    ON  ="<27>&p1p20C" ,
    OFF ="<13><10><1>" );

```

OUTPUT option

The OUTPUT option names the device to which output of the LISTetc commands is directed.

Syntax

```
command [identifier]  
    OUTPUT ( [ [FILE=] filename]  
            [ , [APPEND=] YES | NO ] );
```

Where

command is the LISTALL, LISTCONFIG, LISTTLINEDRAWING, LISTPRINTER or LISTTERMINAL command.

identifier is any object of the command specified.

Operation

The OUTPUT option directs the output of a LIST statement to an ASCII file or to a printer instead of to the default output device. If output is to be printed, the device must be specified by a file equation or the equivalent specification in the format required by the operating system. The file or printer name must conform to the operating system naming conventions.

By default, output sent to an ASCII file is appended to the specified file. If the file does not exist, it will be created. If APPEND=NO, the output overwrites the existing file contents.

On some operating systems (SCO for example), output will be redirected to the terminal window if the Config Utility cannot create the file.

Parameters

FILE	The output ASCII filename.
APPEND	Whether to append the output of the LISTetc command to the file, if a file with that name already exists. YES or NO. Default = YES.

Example

```
LISTPRINTER TD-LASER OUTPUT(FILE=PRINTDEF);
```

PAGE option

The PAGE option specifies the dimensions of a printer page.

Syntax

```
command printer_ID
  PAGE ( [ [LENGTH=]integer]
        [, [WIDTH=]integer ] )
  [option ...];
```

Where

command is the ALTPRINTER or NEWPRINTER command.
printer_ID is a printer definition.
option is any other option of the command.

NOTE The value of the WIDTH parameter, if it is greater than the value set for the RECORD-SIZE parameter of the FILE option, determines the maximum record size (see “[FILE option](#)” on page 46).

Parameters

LENGTH	The page length set on the printer. Must be exactly the same as the page length configured on the physical printer. Maximum = 255. Default = 60.
WIDTH	The page width set on the printer. Maximum = 1000. Default = 132.

Example

```
ALTPRINTER HPLASERJETII PAGE (LENGTH=60, WIDTH =80);
```

POSTSCRIPT option

The POSTSCRIPT option specifies font characteristics and margin settings of a PostScript printer.

Syntax

```
command printer_ID
    POSTSCRIPT ( [ [FONT=] string          ]
                 [, [SCALE-FONT=] numeric  ]
                 [, [LEADING=] numeric     ]
                 [, [TOP-MARGIN=] numeric  ]
                 [, [LEFT-MARGIN=] numeric ] )
    [option ...];
```

Where

command is the ALTPRINTER or NEWPRINTER command.
printer_ID is a printer definition.
option is any other option of the command.

Restrictions

The POSTSCRIPT option applies only to printers whose ENVIRONMENT (TYPE = POSTSCRIPT).

Parameters

FONT	The exact name of the PostScript font you want to use. Must be a valid PostScript font already and must be installed in the printer. Maximum length = 40. Default = Blank, meaning the printer's default font.
SCALE-FONT	The font size in points. Must be a point size available on the printer. Default = 10.
LEADING	The leading—the amount of white space between lines—in points. Default = 2.
TOP-MARGIN	The amount of space, in points, to leave blank at the top of the page. Default = 35 (0.5 inch)
LEFT-MARGIN	The width of the left margin in points. Default = 35 (0.5 inch)

Example

```
ALTPRINTER POSTSCRIPT
    ENVIRONMENT (
        TYPE =POSTSCRIPT,
        DEVICE=PRINTER)
    LINE-DRAWING (
        CODE =ASCII)
    PAGE (
        LENGTH=120,
        WIDTH =150)
    POSTSCRIPT (
        FONT      ="/Courier",
        SCALE-FONT =10,
        LEADING    =2,
        TOP-MARGIN =35,
        LEFT-MARGIN=35);
```

PURGELINEDRAWING command

The PURGELINEDRAWING command deletes a line drawing definition from the configuration file.

Syntax

```
PURGELINEDRAWING ldraw_ID;
```

Where

ldraw_ID is the name of the line drawing definition to be deleted.

Operation

The PURGELINEDRAWING command removes a line drawing definition from the configuration file. After a line drawing definition has been purged, any references by an application to it will result in an error.

Restrictions

The PURGELINEDRAWING command does not offer a confirmation prompt. Purged line drawing definitions cannot be accessed.

Example

```
PURGELINEDRAWING FAKE-LDRAW;
```

PURGEPRINTER command

The PURGEPRINTER command deletes a printer definition from the configuration file.

Syntax

```
PURGEPRINTER printer_ID;
```

Where

printer_ID is the name of the printer definition to be deleted.

Operation

The PURGEPRINTER command removes a printer definition from the configuration file. After a printer definition has been purged, any references by an application to it will result in an error.

Restrictions

The PURGEPRINTER command does not offer a confirmation prompt. Purged printers cannot be accessed.

Example

```
PURGEPRINTER TD-LASER;
```


PURGETERMINAL command

The PURGETERMINAL command deletes a terminal definition from the configuration file.

Syntax

```
PURGETERMINAL terminal_ID;
```

Where

terminal_ID is the name of the terminal definition to be deleted.

Operation

The PURGETERMINAL command removes a terminal definition from the configuration file. After a terminal definition has been purged, any references by an application to it will result in an error.

Restrictions

The PURGETERMINAL command does not offer a confirmation prompt. Purged terminals cannot be accessed.

Example

```
PURGETERMINAL DEMO-TERM;
```

READ-MODE option

The READ-MODE option specifies how keyboard input is handled by the terminal.

Syntax

```
command terminal_ID
  READ-MODE ( [ [TYPE=] keyword          ]
              [ [START-ESCAPE=] string ]
              [, [START-ESCAPE2=] string]
              [, [CURSOR-UP=] string   ]
              [, [CURSOR-DOWN=] string ]
              [, [CURSOR-RIGHT=] string ]
              [, [CURSOR-LEFT=] string ]
              [, [CURSOR-HOME=] string ]
              [, [CURSOR-HOME2=] string ]
              [, [START-INSERT=] string ]
              [, [START-INSERT2=] string ]
              [, [END-INSERT=] string   ]
              [, [TOGGLE-INSERT=] string ]
              [, [DELETE-CHAR=] string  ]
              [, [DELETE-CHAR2=] string ]
              [, [CLEAR-TO-END=] string ]
              [, [CLEAR-LINE=] string   ]
              [, [DELETE-LINE=] string  ]
              [, [INSERT-LINE=] string   ]
              [, [F1=] string            ]
              [, [F2=] string            ]
              [, [F3=] string            ]
              [, [F4=] string            ]
              [, [F5=] string            ]
              [, [F6=] string            ]
              [, [F7=] string            ]
              [, [F8=] string            ]
              [, [PROTECTED=] string     ]
              [, [UNPROTECTED=] string   ]
              [, [XMIT-FNCT-ON=] string  ]
              [, [XMIT-FNCT-OFF=] string ]
              [, [FORMAT-ON=] string     ]
              [, [FORMAT-OFF=] string    ]
              [, [KBD-LOCK=] string      ]
              [, [KBD-UNLOCK=] string    ]
              [option ...] );
```

Where

command is the ALTTERMINAL or NEWTERMINAL command.
terminal_ID is a terminal definition.
option is any other option of the command.

NOTE In the table below, parameters marked with an arrow (▶) are valid only if TYPE=FORMAT.

Parameters

TYPE	The type of behavior of the input field:
	<input type="checkbox"/> FORMAT —user input occurs in a protected area; extra capabilities are available (see parameters marked with an arrow).

- ❑ NORMAL—user input is linear; no automatic carriage return at the end of the input area; a space is not required when delimiting field entries.
- ❑ NORMAL-AUTO—user input is linear; an automatic carriage return is supplied at the end of the input area.

Default = NORMAL.

When spec file [FIELD-ENTRY](#)(AUTO-SKIP:=YES), NORMAL-AUTO is used; when AUTO-SKIP=NO), NORMAL is used.

When terminal type is [HPTERM-AUTO](#), NORMAL-AUTO is used.

- ▶ **START-ESCAPE, START-ESCAPE2** The starting bytes, that is, the characters that announce the start of an escape sequence. Maximum length =4. Two different values are available to signal the beginning of an escape sequence.
- ▶ **CURSOR-UP** The next character—merged with the starting bytes—of the escape sequence. Moves the cursor 1 line up. Maximum length =1.
- ▶ **CURSOR-DOWN** The next character of the escape sequence. Moves the cursor 1 line down. Maximum length =1.
- ▶ **CURSOR-RIGHT** The next character of the escape sequence. Moves the cursor 1 column to the right. Maximum length =1.
- ▶ **CURSOR-LEFT** The next character of the escape sequence. Moves the cursor 1 column to the left. Maximum length =1.
- ▶ **CURSOR-HOME, CURSOR-HOME2** The next character of the escape sequence. Moves the cursor to the home coordinates. Maximum length =1. Two escape sequences are available to move the cursor to the position.
- ▶ **START-INSERT, START-INSERT2** The next character of the escape sequence. Starts the insertion mode. Maximum length =1. Two escape sequences are available to start insertion mode.
- ▶ **END-INSERT** The next character of the escape sequence. Marks the end of the insertion mode. Maximum length =1.
- ▶ **TOGGLE-INSERT** The next character of the escape sequence. Toggles the insertion mode. Maximum length =1.
- ▶ **DELETE-CHAR, DELETE-CHAR2** The next character of the escape sequence. Deletes the current character. Maximum length =1. Two escape sequences are available to delete the current character.
- ▶ **CLEAR-TO-END** The next character of the escape sequence. Clears the display from the cursor position up to the end of the screen. Maximum length =1.
- ▶ **CLEAR-LINE** The next character of the escape sequence. Clears the display from the cursor position up to the end of the line. Maximum length =1.
- ▶ **DELETE-LINE** The next character of the escape sequence. Deletes the current line. Maximum length =1.
- ▶ **INSERT-LINE** The next character of the escape sequence. Inserts a line below the current line. Maximum length =1.
- F1... F8** The next character—merged with the starting byte—of the escape sequence sent by the terminal when the corresponding function key is

pressed. Maximum length =4. Function keys can be pressed in the middle of a field when READ-MODE(TYPE=NORMAL). Previously, they were allowed only at the beginning of a field.

▶ **PROTECTED** The escape sequence that marks the end of the unprotected field. Maximum length =20.

▶ **UNPROTECTED** The escape sequence that marks the start of the unprotected field. Maximum length =20.

XMIT-FNCT-ON The escape sequence that tells the terminal to send escape sequences generated by control keys to the host computer. If local echo is on, the escape sequence is also executed locally. Maximum length =20.

XMIT-FNCT-OFF The escape sequence that tells the terminal not to send escape sequences generated by control keys to the host computer, but to execute them locally. Maximum length =20.

▶ **FORMAT-ON** The escape sequence that activates the PROTECTED parameter. Maximum length =20.

▶ **FORMAT-OFF** The escape sequence that activates the UNPROTECTED parameter. Maximum length =20.

KBD-LOCK The escape sequence that must be sent to lock the keyboard. Maximum length =20.

KBD-UNLOCK The escape sequence that must be sent to unlock the keyboard. Maximum length =20.

NORMAL-AUTO

The NORMAL-AUTO type does not follow the WYSIWYG concept; it follows the WYTIWYG (What You Type Is What You Get). For example, if a field contains ABC, and you position the cursor after the C and type DEF, the field displays ABCDEF. However, when you press Enter, the field then displays (and contains) only DEF, as that is what you actually typed.

The Delete, Insert and arrow keys are not respected, although they seem to work until Enter is pressed or the field is full. Similarly, Alt-K does not blank out the contents of a field permanently; the original value is restored when Enter is pressed. Users should be advised not to use these keys.

Example

```
ALTTERMINAL HPTERM
  READ-MODE (
    TYPE          =FORMAT,
    START-ESCAPE  ="<27>" ,
    CURSOR-UP     ="A" , CURSOR-DOWN  ="B" ,
    CURSOR-RIGHT  ="C" , CURSOR-LEFT  ="D" ,
    CURSOR-HOME   ="H" , CURSOR-HOME2 ="h" ,
    START-INSERT  ="Q" , START-INSERT2="N" ,
    END-INSERT    ="R" ,
    DELETE-CHAR   ="P" ,
    DELETE-CHAR2  ="O" ,
    CLEAR-TO-END  ="J" ,
    CLEAR-LINE    ="K" ,
    DELETE-LINE   ="M" ,
    INSERT-LINE   ="L" ,
    F1            ="p" ,
    F2            ="q" ,
    F3            ="r" ,
    F4            ="s" ,
    F5            ="t" ,
    F6            ="u" ,
    F7            ="v" ,
    F8            ="w" ,
    PROTECTED     ="<27>]" ,
    UNPROTECTED   ="<27>[" ,
    XMIT-FNCT-ON  ="<27>&s1A" ,
    XMIT-FNCT-OFF ="<27>s0A" ,
    FORMAT-ON     ="<27>W" ,
    FORMAT-OFF    ="<27>X" ,
    KBD-LOCK      ="<27>c" ,
    KBD-UNLOCK    ="<27>b" ) ;
```

REDO command

The REDO command lets you edit and re-execute the last Config Utility command.

Syntax

REDO ;


Operation

The REDO command echoes the last-entered Config Utility command to the prompt line and allows you, for example, to correct a typo without having to retype the entire line.


To edit the command:

1. Type REDO ; 

The last-entered command is displayed and the cursor moves to the following line.

2. Press the spacebar until the cursor is positioned under the character you wish to change.
3. Type the replacement character (see “Special REDO characters” on page 78).
4. Press .

The amended command is echoed for verification.

5. Repeat Steps 2 to 4 if more changes are necessary.
6. Press  again to execute the command.




Special REDO characters

The following characters have a special meaning when typed at Step 2 of the procedure described above:

Character	Usage
<i>i</i> char	INSERT—Characters that follow the <i>i</i> are inserted starting at the position above the cursor.
<i>r</i> char	REPLACE—Characters that follow the <i>r</i> replace the same number of characters starting at the position above the <i>r</i> .
<i>d</i>	DELETE—Deletes the character above the <i>d</i> . Use a series of <i>d</i> 's to delete several characters.
>char	APPEND—Characters that follow the > are appended to the end of the line.

NOTE The example assumes that the last-entered command was
LISTPRINTER HPLASERJETII.

Example

```
REDO;   
LISTPRINTER HPLASERJETII;  
                                i-D   
LISTPRINTER HPLASERJETII-D;  
  
NEWPRINTER HPLASERJETII-D  
    ENVIRONMENT (  
        TYPE          =ESCAPE,  
        DEVICE        =PRINTER,  
        CHARACTER-SET=ROMAN8,  
        FORM-FEED     ="<12>" ,  
        PERF-SKIP     =NO,  
        BLANK-LINES   =NO,  
...;
```

RESET option

The RESET option specifies escape sequences to set a terminal or printer to a default state at the end of a Speedware session or print job.

Syntax

```
command identifier
  RESET ( [[RSTnn=] string] ,...)
  [option ...];
```

Where

<i>command</i>	is the ALTPRINTER, ALTTERMINAL, NEWPRINTER or NEWTERMINAL command.
<i>identifier</i>	is a printer or terminal definition.
<i>nn</i>	is a number between 00 and 14.
<i>option</i>	is any other option of the command.

Parameters

RST00... RST14 The escape sequences corresponding to the state in which you want to leave the terminal or printer at the end of the Speedware session or print job. Maximum length = 20.

Example

```
LTPRINTER HPLASERJETII
  RESET (
    RST00="<27>E" );      (* Reset default *)
```


SET option

The SET option specifies escape sequences to set a terminal or printer to a known state before further processing.

Syntax

```
command identifier
    SET ( [[SETnn=] string] , ...)
    [option ...];
```

Where

command is the ALTPRINTER, ALTTERMINAL, NEWPRINTER or NEWTERMINAL command.

identifier is a printer or terminal definition.

nn is a number between 00 and 14. See the example below.

option is any other option of the command.

Parameters

SET00... SET14 The escape sequences corresponding to the setting you want to enforce on the terminal or printer at the beginning of a Speedware session or print job. Refer to your terminal or printer documentation to ensure that you enter the correct escape codes in the proper sequence. Maximum length = 20.

Example

```
ALTPRINTER HP
    SET (
        SET00="<27>E",          (* Reset default *)
        SET02="<27>(8U",        (* Primary Symbol Set=Roman-8 *)
        SET03="<27>&l00",        (* Portrait *)
        SET04="<27>&l6D",        (* 6 lpi *)
        SET05="<27>(s0P",        (* Fixed spacing *)
        SET06="<27>(s10H",       (* 10 cpi *)
        SET07="<27>(s12.0V",     (* 12 point *)
        SET08="<27>(s0s0b0T",    (* Style Upright *)
                                (* Weight Medium *)
                                (* Face LinePrinter *)
        SET09="<27>&l0L",        (* Disable Perf Skip *)
        SET11="<27>&k2G")
```

To set a DeskJet printer called TDESKJET to print in landscape mode:

```
ALTPRINTER TDESKJET SET(SET03=<27>&L10)
                        PAGE(LENGTH=60,WIDTH=132);
```

SLAVE-PRINTER option

The SLAVE-PRINTER option describes the information required by a terminal to operate with a slave printer.

Syntax

```
command printer_ID
  SLAVE-PRINTER ( [ [TYPE=] keyword]
                  [, [ON=] string ]
                  [, [OFF=] string ] )
  [option ...];
```

Where

command is the ALTTERMINAL or NEWTERMINAL command.
terminal_ID is a terminal definition.
option is any other option of the command.

Parameters

TYPE	The type of protocol to operate a slave printer with an HP terminal: HP—HP protocol.
ON	The escape sequence that must be sent to start the slave printer protocol. Maximum length = 20.
OFF	The escape sequence that must be sent to mark the end of the slave printer protocol. Maximum length = 20.

Example

```
ALTTERMINAL HPTerm SLAVE-PRINTER (TYPE=HP,
                                   ON  ="<27>&p1p20C",
                                   OFF ="<13><10><1>" );
```

Supported Devices

Introduction

This appendix lists the printer and terminal drivers currently available.

To add a new device to your configuration file:

1. Pick, from the list of supported devices, the printer or terminal whose definition is as close as possible to the one you want to define.
2. Follow the procedure described under [“Customizing your configuration”](#) on page 10.

NOTE If no printer seem to suit your needs, try using one of the STANDARD types. If all else fails, contact your Speedware Support Center.

Printer types

The following table lists valid printer types defined in the basic CONFIG supplied by Speedware.

Printer types

Printer type	Length/width	Description
EPSON	60/80	Any Epson printer
EPSON-LABEL	100/80	Any Epson printer for labels
EPSONTM-T80	60/80	Epson TM-T80
FILE	60/132	Print to file
HPCCTL	60/132	Printers using carriage control instead of form feed at the end of a page
HPCCTL-100	100/132	
HPLASERJET	60/132	HP LaserJet 12 point, portrait
HPLASERJETII	60/80	HP LaserJet point, 6 lpi, portrait
HPLASERJETII-A4	66	HP LaserJet point, 6 lpi, portrait. Supports A4 paper.
HPLASERJETII-D	60/80	Same as HPLASERJETII + duplex printing (replaces HPLASERJET-5)
HPLASERJETII-D-A4	66	Same as HPLASERJETII + duplex printing (replaces HPLASERJET-5). Supports A4 paper.
HPLASERJETII-H	60/80	Same as HPLASERJETII but with Hindi numeric script
HPLASERJETII-2	46/116	HP LaserJet 12 point, 6 lpi, landscape
HPLASERJETII-2D	46/116	Same as HPLASERJETII-2 + duplex printing
HPLASERJETII-3	82/132	HP LaserJet 8.5 point, 8 lpi, portrait compressed
HPLASERJETII-3D	82/132	Same as HPLASERJETII-3 + duplex printing
HPLASERJETII-4	60/176	HP LaserJet 8.5 point, 8 lpi, landscape compressed
HPLASERJETII-4D	60/176	Same as HPLASERJETII-4 + duplex printing
HPPAINTJET	60/100	HP PaintJet
HPSTD	63/132	Any HP printer, Roman-8, 6 lpi
HPSTD-A4	66	Any HP printer, Roman-8, 6 lpi. Supports A4 paper.
HPSTD-EX	63/132	HP Printer, Roman-8. Supports extended line drawing.
HPSTD-LD	63/132	HP 2934 and HP 2560 printers. Supports line drawing.
HPSTD-2	84/255	Any HP printer Roman-8, 8 lpi compressed
HPSTD-3	60/255	Any HP printer Roman-8, 6 lpi compressed
HPSTD-LABEL	120/150	Any HP printer for labels, Roman-8, 6 lpi (no form feed)
HTML	100/256	Definition for Autobahn and OASIS bound applications.
POSTSCRIPT	120/150	Courier 10 point to printer
POSTSCRIPT-2	120/150	Courier 10 point to file
POSTSCRIPT-3	130/170	Courier 8 point to printer
POSTSCRIPT-4	130/170	Courier 8 point to file
STANDARD	60/132	Any printer, form feed after line 60
STANDARD-A4	66	Any printer, form feed after line 66. Supports A4 paper.
STANDARD-2	100/132	Any printer for labels (no form feed)
STANDARD-FF	60/132	Any printer, form feed after line 60
STANDARD-FF-A4	66	Any printer, form feed after line 66. Supports A4 paper.
STANDARD-59	59/132	Any printer, form feed after line 59
STANDARD-LABEL	100/132	Same as STANDARD-2

Terminal types

The following terminal entry points are supported. Use the appropriate entry point with the `-T` option on the run card to specify your terminal type.

If you are in doubt about which entry point to use for your terminal, start with the most precise emulation. If that entry point does not work, go to a more general one. For example:

- ❑ For an HP700/92 terminal, choose HP70092
- ❑ For an HP2392 terminal, choose HPTERM.

The OS column in the table identifies the OS on the host to which the terminal is connected. The abbreviations are:

- ❑ M = MPE XL and MPE/iX
- ❑ U = all UNIX
- ❑ D = MS-DOS
- ❑ W = Microsoft Windows.

The designation: FORMAT, NORMAL or NORMAL-AUTO refers to the TYPE parameter of the [READ-MODE](#) option. Usually, NORMAL mode restricts the availability of the Delete, Insert and arrow keys; NORMAL-AUTO supplies an automatic carriage return at end of field.

Terminal types

Terminal Type	OS	Description
ADDSA2	M	ADDS Viewpoint A2 terminal NORMAL [†]
	U	NORMAL [†]
ADM5	M	Lear Steigler ADM 5 terminal NORMAL [†]
	U	NORMAL [†]
AIXTERM	M	RS/6000 AIXTERM emulation NORMAL
	U	FORMAT
ANSI	M	Any ANSI terminal other than those below. NORMAL ^{††}
	U	FORMAT
ANSI-PC	D	ANSI on a PC NORMAL
ANSI-PC-ANK	D	ANSI on a PC supporting the ANK (Japanese) character set for line drawing FORMAT
ANSI-PC-ASIAN	D	ANSI on a PC supporting the ASIAN character set for line drawing FORMAT
ANSI-SCO	M	ANSI under SCO UNIX NORMAL ^{††}
	U	FORMAT
CURSES	U	Any UNIX terminal in the TERMINFO database ^{†††} FORMAT
CURSESHP	U	CURSES with HP line drawing ^{††} FORMAT
CURSESIBM	U	CURSES with IBM line drawing ^{††} FORMAT
CURSESPC8	U	CURSES with PC8 line drawing ^{††} FORMAT

Terminal Type	OS	Description
CURSESVT	U	CURSES with VT line drawing ^{†††} VT220, VT320, VT420 on HP-UX <ul style="list-style-type: none"> • must be 7-bit mode • do not support line drawing (use CURSES instead of CURSESVT) FORMAT
CURSESWY	U	CURSES with WYSE line drawing FORMAT
D210	M U	Data General DASHER D210 and D211. NORMAL ^{††} FORMAT
DSW	D	PC color monitor (DSW: Direct Screen Write) FORMAT
DSW-50	D	PC color monitor with 50 lines FORMAT
DSW-ANK	D	PC color monitor supporting the ANK (Japanese) character set for line drawing FORMAT
DSW-ASIAN	D	PC color monitor supporting the ASIAN character set for line drawing FORMAT
DSW-BW	D	PC black and white monitor FORMAT
DSW-BW-ANK	D	PC black and white monitor supporting the ANK (Japanese) character set for line drawing FORMAT
DSW-BW-ASIAN	D	PC black and white monitor supporting the ASIAN character set for line drawing FORMAT
DSW-JAPAN	D	PC color monitor supporting the ASIAN character set for line drawing. 25th line of the screen is reserved for the keyboard shift status line. FORMAT
HP2622	M U	Any HP terminal without line drawing FORMAT FORMAT
HP2622-COLOR	M U	Any HP color terminal without line drawing FORMAT FORMAT
HP2645	M U	HP2645 terminal NORMAL NORMAL
HP70041	M U	HP700/41 terminal NORMAL [†] NORMAL [†]
HP70092	M U	HP700/92 terminal (80 or 132 columns) FORMAT FORMAT
HP70092-ARABIC-A	M U	HP700/92 Arabic terminal (80 or 132 columns) with Arabic digits FORMAT FORMAT
HP70092-ARABIC-A-132	M U	HP700/92 Arabic terminal (132 columns) with Arabic digits FORMAT FORMAT



Terminal Type	OS	Description
HP70092-ARABIC-H		HP700/92 Arabic terminal (80 or 132 columns) with Hindi digits
	M	FORMAT
	U	FORMAT
HP70092-ARABIC-H-132		HP700/92 Arabic terminal (132 columns) with Hindi digits
	M	FORMAT
	U	FORMAT
HP70092-PC		HP700/92 terminal emulator on a PC (80 or 132 columns)
	M	FORMAT
	U	FORMAT
HPTERM		Any HP terminal
	M	FORMAT
	U	FORMAT
HPTERM-ARABIC-A-PC		Any HP Arabic terminal emulator on a PC with Arabic digits
	M	FORMAT
	U	FORMAT
HPTERM-ARABIC-H-PC		Any HP Arabic terminal emulator on a PC with Hindi digits
	M	FORMAT
	U	FORMAT
HPTERM-AUTO		Any HP terminal, MPE platforms only (not HP-UX). Delete, Insert and arrow keys should not be used. HPTYPEAHEAD is turned on.
	M	NORMAL-AUTO
	U	NORMAL-AUTO
HPTERM-COLOR		Any HP color terminal emulator
	M	FORMAT
	U	FORMAT
HPTERM-COLOR-PC		Any HP color terminal emulator on a PC
	M	FORMAT
	U	FORMAT
HPTERM-COLOR-PC-AUTO		Any HP color terminal emulator on a PC
	M	NORMAL-AUTO
	U	NORMAL-AUTO
HPTERM-LIT		Any HP terminal, function keys literal
	M	FORMAT
	U	FORMAT
HPTERM-MINTEL-40		Minitel terminal with 40 columns
	M	NORMAL
	U	NORMAL
HPTERM-MINTEL-80		Minitel terminal with 80 columns
	M	NORMAL
	U	NORMAL
HPTERM-PC		Any HP terminal emulator on a PC
	M	FORMAT
	U	FORMAT
HPTERM-REF-VT ^{††††}		Reflection 2+ terminal emulator on a PC
	M	FORMAT
	U	FORMAT
HPTERM-TELNET ^{†††††}		Any HP terminal emulator on TELNET
	M	FORMAT
	U	FORMAT
HZ1500		Hazeltine 1500 terminal
	M	NORMAL [†]
	U	NORMAL [†]
IBM3101		IBM 3101 ASCII terminal.
	M	FORMAT
	U	FORMAT



Terminal Type	OS	Description
IBM3164		IBM 3164 ASCII color terminal, and IBM 3151 ASCII terminal Must be in 8-bit mode for line drawing.
	M	FORMAT
	U	FORMAT
MINITEL-40		Minitel terminal with 40 columns
	M	NORMAL
	U	NORMAL
MINITEL-80		Minitel terminal with 80 columns
	M	NORMAL
	U	NORMAL
MSWINDOWS		MS Windows, 21 lines x 80 columns
	W	FORMAT
MSWINDOWS-50X132		MS Windows, 50 lines x 132 columns
	W	FORMAT
MSWINDOWS-70X132		MS Windows, 70 lines x 132 columns
	W	FORMAT
QVT101		Qume QVT-101 terminal
	M	NORMAL†
	U	NORMAL†
REFLECTION		Same as HPTERM-PC
REFLECTION-7		Same as HPTERM-COLOR-PC
SMARTERM420		SmartTerm420 emulator of VT terminals. Supports function keys F1 to F8.
	U	FORMAT
TVI905		Televideo TVI 905 terminal
	M	NORMAL
	U	NORMAL
TVI955		Televideo TVI 955 terminal.
	M	NORMAL
	U	FORMAT.
TVITERM		Televideo TVI 910+ terminal, and TVI 925E terminal
	M	NORMAL†
	U	NORMAL†
VIEWDATA		Tandata Td2500 Plus terminal
	M	NORMAL
	U	NORMAL
VIEWDATA-2		Tandata Td2500 Plus terminal without video enhancements
	M	NORMAL
	U	NORMAL
VT52		DEC VT52 terminal. See note on function key mapping.
	M	NORMAL††
	U	FORMAT
VT100		DEC VT100 terminal. See note on function key mapping.
	M	NORMAL††
	U	FORMAT
VT420		DEC VT220, VT320 and VT420 terminals; HP700/44 in VT220-mode; HP700/60 in VT320-mode; HCT1100 in VT220-mode; Reflection 2 See note on function key mapping.
	M	NORMAL††
	U	FORMAT
WY30		WYSE WY30 terminal
	M	NORMAL
	U	NORMAL

Terminal Type	OS	Description
WY50		WYSE WY50 terminal
	M	NORMAL
	U	NORMAL
WY60		WY60 terminal; HP700/60 in WY60-mode.
	M	NORMAL
	U	FORMAT
WY60-43		WY60 terminal; HP700/60 in WY60-mode, 43 lines.
	M	NORMAL
	U	FORMAT

Notes

- † No function keys available.
- †† To use function keys: press the F key, then press Enter.
- ††† If ESC sequences are not properly trapped, set the ESCDELAY variable. For example: `export ESCDELAY=1000`
- †††† When Speedware session starts, switches to HP terminal emulation. Resets to VT terminal emulator at the end of the Speedware session.
- ††††† When you use Reflection under HP-UX on Telnet, the function keys can take 4-5 seconds to respond. This emulation corrects that problem.

Function key mapping, VT terminals

Speedware function keys are mapped to existing keys on VT terminal keyboards as described below.

- ❑ Under MPE, eight function keys are supported, but the Insert, Delete and arrow keys are not supported. For VT420, the terminal must be configured so that programmer-defined function keys are not locked.
- ❑ Under UNIX, eight function keys and the Insert, Delete and arrow keys are supported.

VT100 and VT52

VT100 and VT52 keyboards have 4 programmable function keys. The 8 Speedware function keys are mapped to the numeric keypad, as shown:

PF1 F1	PF2 F2	PF3 F3	PF4 F4
7 F5	8 F6	9 F7	- F8
4 Insert	5 Delete	6 ,	
1	2	3	Enter
0		•	

VT420

The VT420 terminal entry point is used for these terminals:

- ❑ VT220, HP700/44 and HCT1100 in VT220 mode
- ❑ VT320, HP700/60 in VT320 mode
- ❑ VT420
- ❑ Reflection 2 (MS-DOS and Windows).

The function keys are mapped as follows:

Speedware func- tion key	VT220 VT320 VT420	Reflection 2 MS-DOS	Reflection 2 Windows	HCT1100 (India)
F1	F6	Alt-6	Shift-Ctrl-6	F6
F2	F7	Alt-7	Shift-Ctrl-7	F7
F3	F8	Alt-8	Shift-Ctrl-8	F8
F4	F9	Alt-9	Shift-Ctrl-9	F9
F5	F10	Alt-0	Shift-Ctrl-0	F10
F6	F11	Alt-q	Shift-Ctrl-q	F11
F7	F12	Alt-w	Shift-Ctrl-w	F12
F8	F13	Alt-e	Shift-Ctrl-e	Alt-F3

On VT420 terminals, the range of function keys that Speedware may address is F6 to F13 (F1 through F5 are mapped to terminal functions like setup, print, etc.) In the default config file for VT420 terminals, `FUNCTION-KEYS (FIRST-KEY=6)`.

Consequently, on VT420 terminals, the keyboard shortcut `>Fn` has a range of 6 to 13 rather than 1 to 8. For example, type `>F6` to access F6.

Troubleshooting

Introduction

This appendix answers a few questions that are often asked during technical support calls and provides some troubleshooting assistance. If you get an error and are unable to resolve it, please contact your Speedware Support Center for help.

NOTE Because the Config Utility commands use escape sequences that are hardware-dependent, you should first make sure that the escape sequences or PostScript language instructions coded in your Config statements are accurate before calling your Speedware Support Center.

What is an escape sequence?

An escape sequence is a command that instructs the terminal or printer to perform a given task. Most of the time, the first character of an escape sequence is the ASCII escape character (<27>) often represented as E_C . The E_C character is a special control code that identifies subsequent characters as a command. When the printer or terminal encounters this character, it knows that the next characters must be interpreted as a command to perform, not as plain data.

A typical escape sequence for an HP LaserJet 4 printer has the following format:

$E_C\&l\#O$

Where

E_C	is the escape character
$\&l$	indicates the type of command
$\#$	is the value field, usually a digit
O	is the termination character, an uppercase letter.

For example, on an HP LaserJet 4 printer, setting the value field to “1” sets the orientation to landscape:

$E_C\&11O$

NOTE Although escape sequences are pretty standard within a device type for a given manufacturer, you should always check in the printer manual to minimize problems.

My printout isn't right

If your report doesn't match what you thought you had coded, try to identify the source of the problem.

Speedware/4GL

1. What is the report page length?

Speedware compares the report definition, in the spec, and the printer definition, in CONFIG, and sets the page size to the smallest value.

Make sure the page length specified in Speedware is compatible with the setting in CONFIG.

2. Which printer are you *really* using?

The PROFILE lists all the printers available to a specific user in three categories: SYSTEM, LOCAL and PRIVATE. Speedware uses this information to direct the output of a report execution to a specific printer. Two users may send the same report to the SYSTEM2 printer, but SYSTEM2 may be mapped to a different printer for each user.

NOTE To find out who is actually printing the report, print the user ID:
`ON TERMINAL DO PRINT $USER;`
 You may realize that you are not the user you thought you were!

Choose the right printer.

3. Do you send your own escape sequences?

If you have embedded escape sequences in you Speedware/4GL report, take them out and try printing again. If it works fine, check the accuracy of your escape sequences. If they were coded correctly, call your printer manufacturer.

The configuration file

1. What is the printer's page length?

Speedware compares the printer definition, in CONFIG, and the physical printer page length.

Make sure the page length specified in CONFIG—specified `PAGE (LENGTH=nnn)`—matches the setting of the physical printer.

2. How is page eject handled?

PERF-SKIP must be set to YES if the physical printer performs a form feed when the bottom of the text length is reached? (See [“Page length vs text length”](#) on page 94.)

Make sure that the form feed character—specified by `ENVIRONMENT (FORM-FEED=string)`—is coded properly. Leave the string empty for non-Escape-type printers.

3. Does the report print right sometimes?

If the printout is not always wrong, verify the `SETnn` options to make sure you reset the printer to a known state at the beginning of the job.

4. Do you use your own escape sequences in addition to those specified in the basic CONFIG?

Make sure your printer accepts escape sequences. Verify all escape sequences that may affect the printed output. If in doubt, call your printer manufacturer.

The spooler

Is the Speedware output right?

Stop your report in the spooler if this is possible with your operating system. Verify the contents of the file (see [“Unexpected blank lines in a report”](#) on page 96 for details).

If the spool file looks right, call your printer manufacturer or operating system vendor.

Quick test

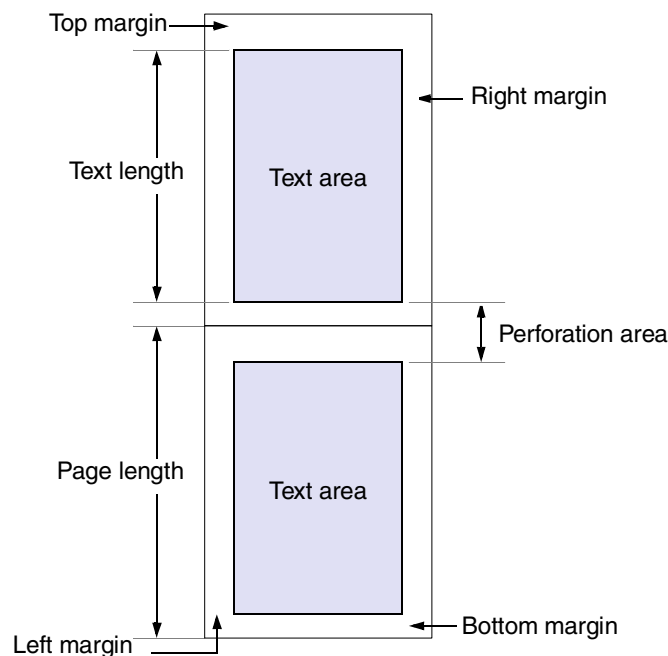
To quickly test your escape sequences:

1. Put all escape sequences used with your printer in an ASCII file.
2. Print the file on the *faulty* printer.
3. If the printout isn't right, verify your printer configuration and your spooler configuration as explained earlier.

Page length vs text length

Text printing may be restricted to a specific area of the page by the following settings (refer to the illustration for details):

- ❑ Text length—set by a `SETnn` option to the same value specified by `ALTTPRINTER PAGE(LENGTH=nnn)`
- ❑ Perforation skip mode—set by `ALTTPRINTER ENVIRONMENT(PERF-SKIP=YES|NO)` and by a corresponding `SETnn` option if necessary.



- ❑ Left margin—set by `ALTTPRINTER POSTSCRIPT(LEFT-MARGIN=nnn)`, for PostScript printers, or by a `SETnn` option
- ❑ Top margin—set by `ALTTPRINTER POSTSCRIPT(TOP-MARGIN=nnn)`, for PostScript printers, or by a `SETnn` option.

NOTE Text length and perforation skip do not apply to PostScript printers.

You can use SET options to specify all margins, including the right margin. The bottom margin is actually set by the text length.

How do I print continuous forms?

The STANDARD-LABEL printer definition in the CONFIG file can be used to print up to a maximum of 100 lines on continuous forms. If you need to print more lines, create a new printer definition based on STANDARD-LABEL and follow this procedure:

1. Adjust the page length, for example:

```
ALTTPRINTER PRT150 PAGE(LENGTH=150);
```

2. Specify a text length equal to the page length. With an HP LaserJet printer, for example, you would need to send the following escape sequences:

```
ALTTPRINTER PRT150 SET(SET00="<27>&l150F");
ALTTPRINTER PRT150 SET(SET01="<27>&l150P");
```

3. Disable the perforation skip:

```
ALTTPRINTER PRT150 ENVIRONMENT(PERF-SKIP=NO);
ALTTPRINTER PRT150 SET(SET02="<27>&l0L");
```

More about FORM-FEED and PERF-SKIP

A major source of technical support calls is a misunderstanding of the behavior of the FORM-FEED and PERF-SKIP parameters of the ENVIRONMENT option. The PERF-SKIP parameter tells Speedware whether the printer automatically performs a form feed when the bottom of the printed page is reached.

When PERF-SKIP is set to:

- ❑ **Yes**, Speedware sends the character specified by the FORM-FEED parameter of the ENVIRONMENT option (usually ASCII <12>) only if the number of lines on the printed page is less than the `PAGE(LENGTH=nnn)` value.

`ENVIRONMENT(PERF-SKIP=YES)` assumes that the printer automatically performs a form feed when the bottom of the page is reached.

- ❑ **No**, tells Speedware to send the form feed character to move the beginning of the text area on the next page.

Blank pages


If each printed page is followed by a blank page, Speedware and the printer are probably sending a form feed character at the same time.

1. Try setting `ENVIRONMENT(PERF-SKIP=YES)`.
2. Alternatively, verify `PAGE(LENGTH=nnn)` to make sure that it is set correctly.

Unexpected blank lines in a report

If your printed report doesn't match what you thought you had told Speedware to do, here is a simple procedure that should help you identify the source of the problem:

1. Make sure that the printer definition in CONFIG matches the settings of the physical printer.
2. Print the report in a different mode to stop it into the spooler. For example, on MPE, type the following file equation:

```
FILE spoolname;DEV=LP,1,1 
```

... to save your report output in `spoolname` instead of sending it directly to the printer.

3. Using an editor that lets you display special codes, read `spoolname` as a text file and examine the code. Pay particular attention to form feed codes (ASCII `<12>` or `<FF>`). If they appear where they should, and if the report format matches the printer text length, the problem is probably with the printer itself.
4. Check all escape sequences to make sure that they are coded correctly. Escape sequences differ from printer to printer. Even though HP printers use standard escape sequences, a LaserJet escape sequence may not be available on a standard line printer.

NOTE To test your escape sequences, enter them in a file with data and send the file to print. If you do not get the expected results, verify in your printer manual or call your printer manufacturer.

5. If everything else fails, call your Speedware Support Center. Please remember that it is your responsibility to ensure that the escape sequences you have coded in a report, if any, do not conflict with the escape sequences specified in the CONFIG file supplied by Speedware.

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