

Minisoft

Sharing Legacy Data with the Outside World Using

JAVELIN[®]



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Printing History: 1st Release - April 25, 2001
 2nd Release - April 25, 2002
 3rd Release - May 8, 2002
 4th Release - Oct. 9, 2002
 Version 2.6f - Dec. 5, 2002
 Version 2.8 - February 5, 2004

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Introduction

Javelin is a Java applet that enables you to run host-based applications across the Internet using a browser such as Netscape Navigator or Microsoft Internet Explorer, rather than a traditional terminal emulator.

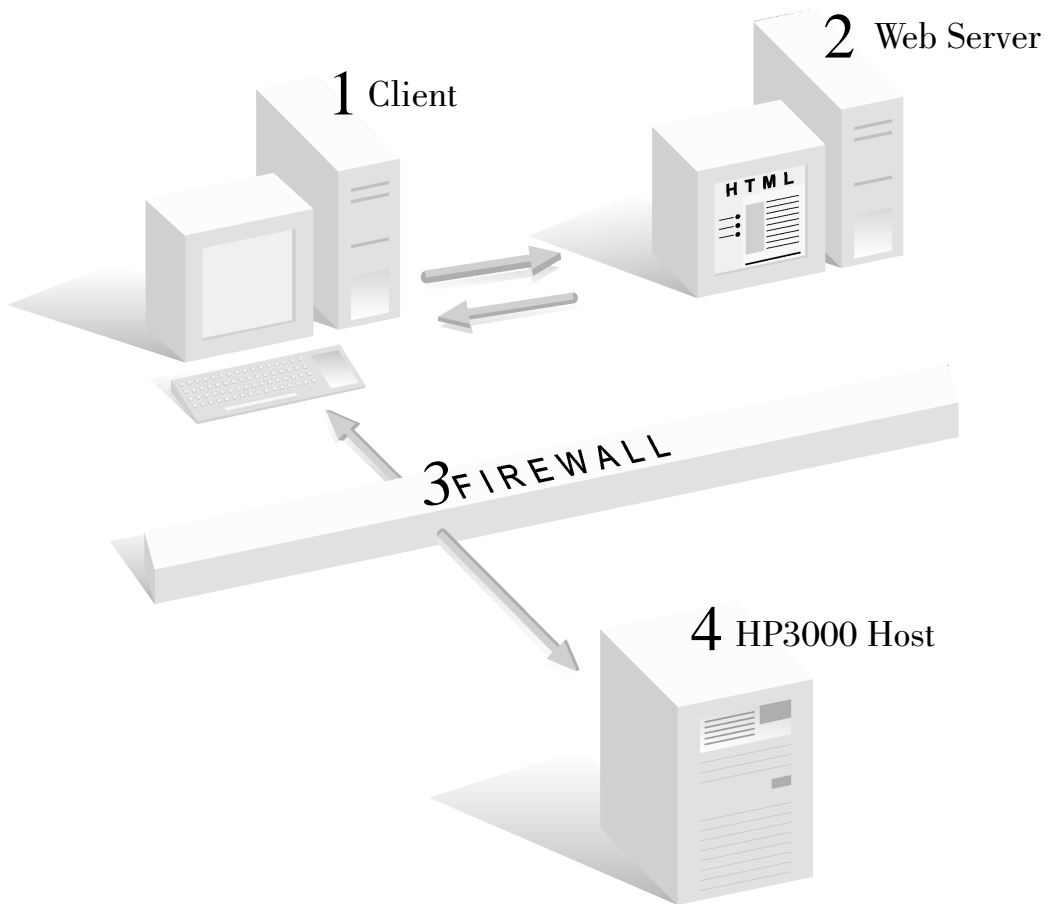
In order to give remote users access to your host applications, install Javelin on your web server and create a web page that includes a link to Javelin. When a user clicks on the Javelin link (Java applet), the web server sends a copy of Javelin to their machine. Javelin then runs automatically, connects to your host computer, starts the specified application and displays the application's screen.

Javelin is available in HP (700/92 compatible) and DEC (VT320 compatible) versions. It is also available with or without SSL encryption (See Illustration 1 and 2).

When using encryption, Javelin connects to an encryption server program that Minisoft provides rather than directly to the host. The encryption server then makes a connection to the host and handles translation of the encrypted data.

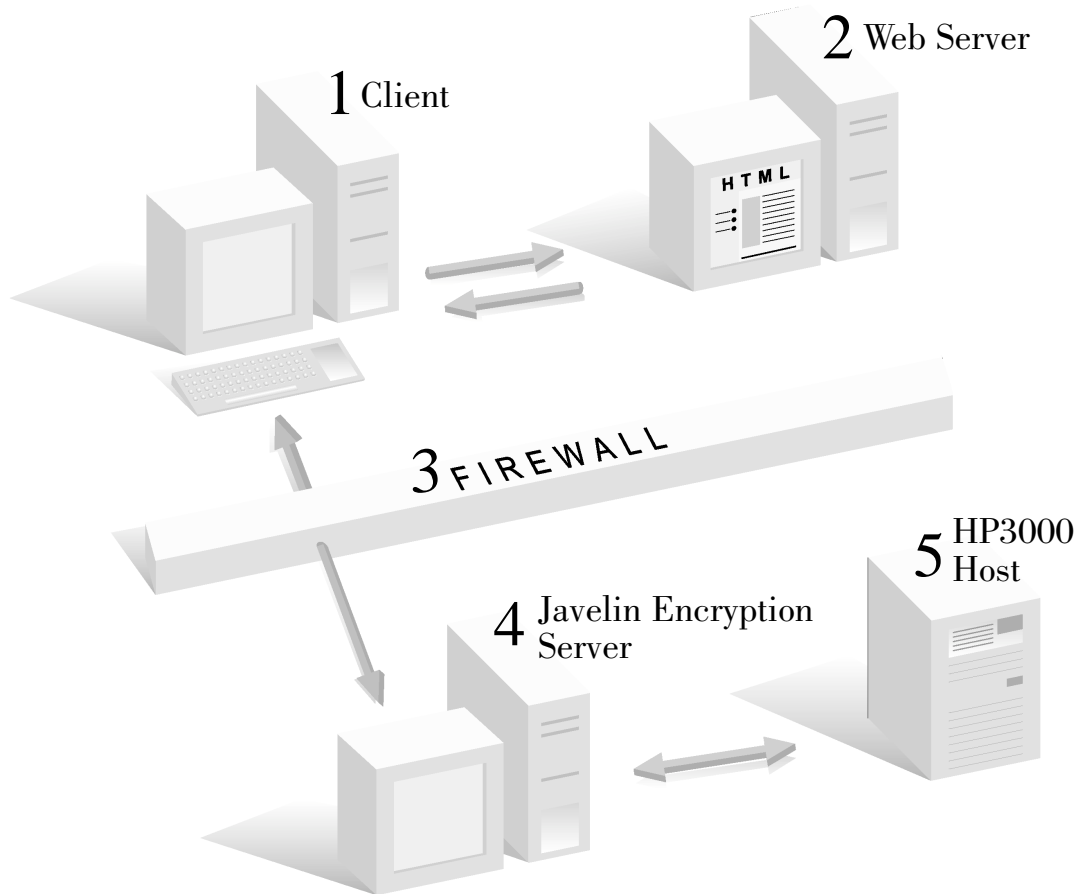
Note: The web server, encryption server, and host application may run on the same or a different machine. For example, your web server may be Apache running on your HP e3000, which also runs your application. Alternatively, your web server might be Microsoft Internet Information Server (IIS) running on a Windows NT server, while the application runs on an HP9000.

Illustration 1: Non-Encrypted Javelin



- 1. Client using Netscape or IE browser opens the HTML file and initiates the Javelin Applet.*
- 2. Web Server sends the Java applet to the client's machine.*
- 3. FireWall/Proxy Server (if applicable) enables the appropriate port on the host machine.*
- 4. Javelin running on the client communicates with the Host.*

Illustration 2: SSL Encrypted Javelin



- 1. Client using Netscape or IE browser opens the HTML file and initiates the Javelin Encrypted Applet.*
- 2. Web Server sends the Java applet to the client's machine.*
- 3. FireWall/Proxy Server (if applicable) enables the appropriate port on the Javelin Encryption Server (JES) machine.*
- 4. Javelin running on the client communicates with the Javelin Encryption Server in encrypted text.*
- 5. Javelin Encryption Server communicates with the Host in clear text.*

MAC and PC User Requirements

MAC Requirements

Java security normally requires the host computer to be the same (i.e. at the same IP address) as the web server when connecting from an applet. On the PC, this requirement can be overwritten by the use of applets, specially “signed” by a software publisher authenticated by a certificate authority (e.g. Verisign). However, this option is not available on the Macintosh.

Therefore, if you want to use Javelin to connect Macintosh computers to a host, you have two options. One is to run the web server on the host itself (for example, Apache on the e3000). This is not always convenient. The other alternative is to use the encrypted version of Javelin. This way the Macintosh actually connects to the encryption server (JES) rather than directly to the host. JES then becomes the host as far as Java is concerned. Since JES can run on the same machine as most web servers, this fulfills the requirement that the web server and host be at the same IP address.

Browser Requirements

MAC users must use Internet Explorer 5.0 or later.

PC Requirements

Netscape - Non and SSL Encrypted

Browser Requirements - Netscape users running Windows 95, 98, or ME need Netscape 4.7 or later.

Netscape users running NT, Windows 2000, or XP must have Netscape 6.0 or later.

Internet Explorer - Non and SSL Encrypted

Browser Requirements - Microsoft Internet Explorer users must have version 4.01 or greater. To determine your version number, select Help-About from the Internet Explorer main menu. Your screen should then display 4.0 or greater.

To update your current version of Internet Explorer, simply use “Windows Update” from the Microsoft Internet Explorer Tools menu.

Java Virtual Machine Requirements (JVM)

Printing supported by Java and used by Javelin requires you to have one of the latest versions of Java Virtual Machine. If you are having printing or other isolated problems with Javelin, make sure you have the latest version.

Windows users must have 5.0.0.3164 or greater.

To check your version of JVM, enable the Java console:

1. Right mouse click the IE icon or select Internet Options from the Internet Explorer Tools menu.
2. Select the Advanced tab from the Internet Options dialog box.
3. From the list of Java Virtual Machines select the Java Console to be enabled.
4. Exit and restart Internet Explorer.
5. After restarting Internet Explorer select Java Console from the View Menu. The version number is displayed in the dialog box along with the release number.

To update JVM, do one of the following:

1. From Internet Explorer select Windows Update from the Tools menu. Select Microsoft Virtual Machine from the Security option and then download.
2. Download the latest IE setup file. Select Minimal install and update the Microsoft Virtual Machine.

Other Platforms

Clients using Linux, Sun, HP/UNIX, etc. follow the instructions given under the PC Requirements, according to their browser type.

Web Server Requirements

The web server requires the following files on its system:

1. j92.cab (HP) and/or j320.cab (VT) if users will be running Microsoft IE.
2. j92.jar (HP) and/or j320.jar (VT) if users will be running Netscape.
3. j92sec.cab (HP) and/or j320sec.cab (VT) if users will be running Microsoft IE with the encrypted version of Javelin.
4. j92sec.jar (HP) and/or j320sec.jar (VT) if users will be running Netscape Navigator with the encrypted version of Javelin.
5. An HTML file that contains a link to Javelin and specifies the configuration file.
6. A configuration file that specifies the host name, port and other optional parameters (default.92 or default.j32). If encryption is to be used, the configuration file must contain the line ENCRYPT ON (see ENCRYPT in the *Configuration File Options* chapter).

Note: The web server does not have to be running on the same physical machine as the host application.

Getting Started with Javelin

Installation

Install the contents of the Javelin CD onto your Web Server:

1. Insert the Javelin CD into your CD-ROM drive.
2. From the Taskbar select Run.
3. Depending on the type of version you are running, install one of the following (D being the letter of your CD-ROM drive.):

D:\JavelinHP.exe
D:\JavelinSGA.exe
D:\JavelinVT.exe

4. Install all files into your Web Server directory, if you so desire.

Configure the Configuration File

- ◆ *default.j92*
- ◆ *default.j32*

You can override the default settings in Javelin with the configuration file. This is an ASCII text file that you create or edit with a text editor such as Microsoft's Notepad to be saved on the web server in the same directory as your Javelin CAB and JAR files. The configuration file should have, but is not required to have, the extension *j92* or *j32*.

Using Notepad or Wordpad open the file *default.j92* (for example). Licensed users will see the following information in the first 3 lines.

Example:

```
CUST "YOUR COMPANY NAME INC."  
USERS 10  
SERIAL 6129516
```

For each license, a serial number is generated based on the customers name and number of users. Make sure the name and number of users is correct. If not, please notify Minisoft for the correct license information. You cannot change the information without a new serial number being generated.

If you have a demo copy of Javelin, the first 6 lines contains the following information:

Example:

```
CUST "Minisoft, HP Demo Copy"  
DEMO  
EXPMO 9  
EXPYR 1999  
USERS 10  
SERIAL 3129516
```

With *default.j92* opened in Notepad, do the following:

1. Change the following line to read your Host IP Address or Node name:

Change:

```
HOSTNAME "Put your Host IP or Node Name between the quotes"
```

To (for example):

```
HOSTNAME "192.1.1.1"
```

2. If the Host you are connecting to is an HP e3000 then continue with Step 4.
3. If the Host you are connecting to is an HP9000, change the following:

Change:

```
PORT 1570  
NSVT ON
```

To:

```
PORT 23  
NSVT OFF
```

4. Save the changes made and exit the application.

Note: For more information on customizing your configuration file, see chapter heading *Configuration File Options*.

HTML Parameters

In earlier versions of Javelin, HTML parameters were used to set the HP login, number of columns, color display, host IP or node name, protocol, and port number. These parameters have been removed from the HTML code and placed in the Javelin Configuration file. (See chapter heading *Configuration File Options*.)

To set the name of a configuration file in your HTML file (*default.j92*), use the Config parameter. For example, add the following to your HTML code if you are using *default.j92*:

```
<param Config value="default.j92">
```

A configuration file is required. If Javelin does not find one it will not connect, as the customer's name, number of users, and serial number are in the Configuration file.

Note: The Host IP or node name, protocol, and port number are still recognized by the HTML but are not needed and will be overridden by the Configuration file at start up.

DEFAULT92.HTML

The following examples are for NSVT connections using hostport 1570 on an HP e3000. If you are using a TELNET connection change the protocol to TELNET and the hostport to 23.

Clients using ENCRYPT.HTML must edit the following lines in the configuration file *default.j92*:

1. Change the following line to read your JES machine IP or Node name:

Change:

HOSTNAME "Put your Host IP or Node Name between the quotes"

To (for example):

HOSTNAME "192.1.1.1"
(Your JES IP Address)

2. Change:

PORT 1570

To:

Port number you set when starting the JES machine.

3. ENCRYPT ON must be set.

Note: See heading *Running JES* under the Javelin Encryption Server chapter.

DEFAULT92.html Example

```
<html>
<head>
<title>Javelin-HP Emulator by MiniSoft</title>
</head>
<body>
<h1>Javelin-HP Emulator by MiniSoft</h1>
<applet codebase="." archive="j92.jar" code="J92.class" id="J92">
<param name="cabase" value="j92.cab">
<param name="Config" value="default.j92">
</applet>
<h1>Do not close this window while Javelin is running.</h1>
</body>
</html>
```

Javelin Encryption Server (JES)

JES is a Java application that is provided with the Secure Javelin series of terminal emulation applets. JES resides on a machine at the host site, and performs the translation of the encrypted data coming from Javelin Applets across the Internet.

Javelin and JES will ensure encryption of data passing between the users and the JES machine. It will not guarantee protection of your host machine from outside access if they are not themselves properly isolated from the Internet by proxy servers or other security devices.

The Javelin applet initially connects to the machine running JES. This machine must be accessible from the Internet. The connection is made to the IP address of that machine and to a TCP/IP port that you specify.

The port and address are specified in the configuration file that is referenced in the html code that invokes Javelin. JES in turn makes a connection to the host machine using a port you specify; this will normally be 23 for Telnet or 1570 for NSVT.

Note: For Macintosh users connecting to Javelin, the JES server must be on the Web Server.

The JES machine and the host should be configured in such a way that traffic passing between JES and the host is not visible on the Internet. It is up to you how you achieve this. Typically this would be done using network segmentation and a firewall.

JES Requirements

- ◆ JES server must have a STATIC IP address.
- ◆ Javelin Encryption Server must have access to the client and host machine.

Installing JES

JES requires a computer with the Java Run-time environment and access to the Internet and Host machine.

To obtain Java Runtime for Windows and Solaris environments, download a copy of the java.exe file from <http://java.sun.com> and select the latest release of the Java Development Kit.

Running JES

Unix

Verify that java is in your \$PATH. For example:

```
# java -version
java version "1.2.2"
Classic VM (build Linux_JDK_1.2.2_FCS, native threads, sunwjit)
#
```

If you receive the following for example:

```
# java -version
bash: java: command not found
#
```

use the find command to locate java and its path:

```
# find / -name java
/usr/lib/netscape/java
/usr/local/java
```

```
/usr/local/java/j2re1.3.1/bin/i386/green_threads/java
/usr/local/java/j2re1.3.1/bin/i386/native_threads/java
/usr/local/java/j2re1.3.1/bin/java
#
```

Create a shell script that references the current java and includes the references needed by jes. For example:

```
java -cp Jes.jar Jes hostname hostport clientport
```

or

```
/usr/local/java/j2re1.3.1/bin/java -cp Jes.jar Jes hostname hostport clientport
```

hostname is the name or IP address of the host computer (e.g. the HP3000).
hostport is the TCP/IP port that the host is listening on (e.g. 23 or 1570).
clientport is the TCP/IP port that JES is listening on. You can choose this port – it is the one that Javelin will connect to and will also be specified in the configuration file.

On most Unix systems, the user class path is specified as a string, with a colon (:) separating the class path entries. The java launcher puts the user class path string in the `java.class.path` system property. The possible sources of this value are:

- ◆ The default value, “.”, meaning that the user class files are all class files in the current directory (or under it, if in a package).
- ◆ The value of the CLASSPATH environment variable, which overrides the default value.
- ◆ The value of the `-cp` or `-classpath` command line option, which overrides both the default value and the CLASSPATH value.

For further information, please visit the Sun website.

Windows

Since JES is a Java Application, it is executed by the Java Run-time program. From the START menu:

Select *Run*.

Enter the following command line:

```
java -cp <jes.jar path> Jes hostname hostport clientport
```

hostname - is the name or IP address of the host computer (e.g. the HP3000).

hostport - is the TCP/IP port that the host is listening on (e.g. 23 or 1570).

clientport - is the TCP/IP port that JES is listening on. You can choose this port – it is the one that Javelin will connect to and will also be specified in the html file.

Example:

```
java -cp C:\Javelin\jes.jar Jes 123.465.0.9 1570 1570
```

Using Jview

```
jview /cp:a Jes.jar Jes hostname hostport clientport
```

java.exe path - is the path to the .jar, .zip or .class files. Each path should end with a filename or directory depending on what you are setting the class path to:

- ◆ For a .jar or .zip file that contains .class files, the path ends with the name of the .zip or .jar file.
- ◆ For .class files in an unnamed package, the path ends with the directory that contains the .class files.
- ◆ For .class files in a named package, the path ends with the directory that contains the “root” package (the first package in the full package name).

hostname is the name or IP address of the host computer (e.g. the HP3000).

hostport is the TCP/IP port that the host is listening on (e.g. 23 or 1570).

clientport is the TCP/IP port that JES is listening on. You can choose this port – it is the one that Javelin will connect to and will also be specified in the configuration file.

Note: For further information please, visit the [Sun website](#).

Setup an icon to the java.exe file on the JES machine instead of using the run command (Windows based example only):

TARGET

```
java.exe -cp Jes.jar Jes hostname hostport clientport
```

START IN (location where Javelin was installed)

```
c:\Javelin
```

hostname is the name or IP address of the host computer (e.g. the HP3000).

hostport is the TCP/IP port that the host is listening on (e.g. 23 or 1570).

clientport is the TCP/IP port that JES is listening on. You can choose this port – it is the one that Javelin will connect to and will also be specified in the html file.

Configuring Javelin

Configure your web page to instruct the user's browser to run Java and the Secure Javelin, connecting to the IP address and Port of the JES machine as the Host computer.

The HTML file must use the configuration file that has the IP address of the JES machine as the Host IP address or Node name. Also, references to J92.jar and J92.cab files in the HTML need to be changed to the secure versions J92sec.jar and J92sec.cab.

Note: Instructions for configuring the web page are the same as non-secure versions of Javelin.

Configuration File Options

The configuration file contains three or more lines. Each line specifies a different configuration setting.

For example, to have Javelin log on as a certain user add the following to the configuration file:

```
LOGINCHAR 17
LOGIN "HELLO GUEST1.DEMO"
```

The following commands are recognized in the configuration file:

BGCOLOR	FKEY	PRINTMARGIN
BLINK BOLD	FTPLOG	PRTIME
BLINK ITALIC	FTASCII	RETENTER
BLOCKCURSOR	HIDEFKEYS	ROWS
BLOCKENTER	HOST CONTROL	SCRDELAY
BUFFERTEXT	HOST NAME	SCREEN80
CAPSLOCK	IDSTRING	SCREEN132
CENTERING OFF	KEEPALIVE	SER9
COLUMNS	LOGIN	SER14
COMPCODES	LOGINCHAR	STRAP
DESTRBS	MAP	TRACE ON
ENCRYPT	NSVT	TRANSLATION TABLES
ENTERCLMSG	PACKFILE	TYPEAHEAD
EVTFILE	PORT	USERKEYS
EXITONLEAVE	PRINTERFONT	VSCROLL
FGCOLOR	PRINTING	

BGCOLOR

Changes the Background Color:

```
BGCOLOR "<attribute>" <color>
```

<attribute> is the attribute character used to control HP terminals display as shown in the *Color Attributes Chart*.

<color> Black, Blue, Cyan, Darkblue, Darkcyan, Darkgray, Darkgreen, Darkyellow, Darkred, Gray, Green, Lightgray, Magenta, Orange, Pink, Red, White, Yellow.

Examples:

To set the standard default colors to red on black, use the following:

```
FGCOLOR "@" Red  
BGCOLOR "@" Black
```

```
FGCOLOR "NORMAL" Red  
BGCOLOR "NORMAL" Black
```

To set the color for inverse to gray on yellow, use the following:

```
FGCOLOR "B" Gray  
BGCOLOR "B" Yellow
```

```
FGCOLOR "INVERSE" Grey  
BGCOLOR "INVERSE" Yellow
```

Note: Many HP applications use half-bright inverse (attribute J) for data-entry fields.

COLOR ATTRIBUTES CHART

<u>Value of Attribute</u>	<u>Default Foreground</u>	<u>Default Background</u>
@ Plain text	Cyan	Blue
A Blinking	Red	Cyan
B Inverse	Blue	White
C Blinking Inverse	Red	White
D Underline	Blue	Cyan
E Blinking Underline	Red	Cyan
F Inverse Underline	Blue	White
G Blinking Inverse Underline	Red	White
H Half-Bright	Cyan	Blue
I Half-Bright Blinking	Red	Cyan
J Half-Bright Inverse	Gray	White
K Half-Bright Blinking Inverse	Red	White
L Half-Bright Underline	Blue	Cyan
M Half-Bright Blinking Underline	Red	Cyan
N Half-Bright Inverse Underline	Blue	White
O Half-Bright Blinking Inverse Underline	Red	White
P HP Function Keys	Black	Gray

Alternate Color Attributes

NORMAL	HALFBRITE
BLINK	HALFBRITE_BLINK
INVERSE	HALFBRITE_INVERSE
BLINK_INVERSE	HALFBRITE_BLINK_INVERSE
UNDERLINE	HALFBRITE_UNDERLINE
BLINK_UNDERLINE	HALFBRITE_BLINK_UNDERLINE
INVERSE_UNDERLINE	HALFBRITE_INVERSE_UNDERLINE
BLINK_INVERSE_UNDERLINE	HALFBRITE_BLINK_INVERSE_UNDERLINE

BLINK BOLD

Bold font to represent blinking.

BLINK ITALIC

Italic font to represent blinking.

BLOCKCURSOR

To control the shape of the Cursor:

BLOCKCURSOR <value>

<value> Set value to ON to have a block cursor, OFF to have an underscore for a cursor. Default is OFF.

BLOCKENTER

For the Enter key to equal an Enter when in block mode or a Return at any other time:

BLOCKENTER <value>

<value> To change between Return and Enter automatically, set this value to ON. Default is OFF.

Note: Java in Windows does not allow the code to know the difference between the Alpha/Numeric 'enter key' and the Numeric keypad 'enter key'. Setting BlockEnter ON allows most clients to use Javelin without having to learn a new key for 'Enter'. When in Block Mode both enter keys become the same as the HP Terminals Numeric Keypad 'enter key'. When not in Block Mode both enter keys become a Carriage Return, the same as the HP Terminals Alpha/Numeric 'return key'.

BUFFERTEXT ON

Optimize screen handling in very complex block mode screens as follows:

BUFFERTEXT <ON>

<ON> When set to ON in block mode the screen will not be updated until a Read is received from the Host, indicating that the host is ready for input and that presumably it has therefore finished painting the screen. Default is OFF.

CAPSLOCK

CAPSLOCK <ON/OFF>

Sets default typing to capital letters. Using the <shift> key will display lower case letters. This is a software enhancement. The Caps Lock light will not go on nor will the Caps Lock button have any effect. This may not work correctly with some translation tables.

CENTERING OFF

The display stays left justified as the font re-sizes due to changes in the screen size.

COLUMNS

Sets the number of columns:

COLUMNS <columns>

<columns> Number of columns Javelin displays (80 or 132). Default is 80.

COMPCODES

Sets Javelin to respond to host commands:

COMPCODES *<value>*

<value> OFF if the completion codes of S or F are not to be returned. Default ON.

DESTRBS

For destructive backspace:

DESTRBS *<value>*

<value> Set value ON to delete characters when backspacing. Default is OFF.

ENCRYPT

Controls the SSL Encryption:

ENCRYPT *<value>*

<value> OFF

ON

DES

TRIPLEDES

Default is OFF. ON and DES mean the same thing.

ENTERCLRMSG

ENTERCLRMSG ON

If this line is found in the configuration file, and a message is displayed in place of the function key labels, and the user presses the ENTER key, the message will be cleared and the ENTER key otherwise ignored.

EVTFILE

This should be used under the direction of Minisoft's technical support.

EVTFILE <value>

<value> The name of the file that contains the trace information. This file path should be fully qualified. Note, in the example below two back slashes (\\) instead of one, are required for Javelin to recognize this command.

Example:

EVTFILE "C:\\Temp\\Test.EVT"

EXITONLEAVE

For Javelin to exit when the Browser changes pages:

EXITONLEAVE <value>

<value> Set value to ON to have Javelin exit on change of browser page. Default is OFF.

Note: If this is set, and the user changes to another page in the browser, Javelin will quit. This will not log off the host correctly and may generate console error messages. The correct way to log off the HP e3000 is to quit the current application and type BYE. Then close or exit Javelin.

FGCOLOR

You can change the colors Javelin uses to display various combinations of screen attributes by inserting appropriate settings in the configuration file. See the Color Attributes Chart.

Changes the Foreground Color:

```
FGCOLOR "<attribute>" <color>
```

FKEY

To control the value of the User keys at startup:

```
FKEY <key> <attribute> <"label string"> <"value string">
```

<key> Value 1 to 8 that corresponds to the Function Keys F1 to F8.

<attribute> N for Normal, L for Local Only, T for Transmit only.

<"label string"> 16 characters. First 8 characters on line one, the rest on line two of the User key label.

<"value string"> 80 characters of data to be sent based on the attribute above. A caret (^) preceding a character changes that character to a Control Character.

Example:

```
FKEY 2 T "Logon HP3000" "hello mgr.sys"
```

Sets User Key 2 label to Logon in the first line, HP e3000 on second line with the value 'hello mgr.sys' transmitted to the host with a terminating character as Attribute T.

FTPROG

To specify the name of the host file transfer program, use the following command:

```
FTPROG WS92LINK.PUB.SYS
```

This is the Minisoft file transfer protocol compatible with WS92LINK, using large blocks and no compression. Works with MPE only, not HP/UX hosts.

FTASCII

To default file transfer as ASCII, use the following command:

```
FTASCII
```

HIDEFKEYS

If you wish to hide function keys at startup, use the following command:

```
HIDEFKEYS <value>
```

<value> Set value to ON to turn off display function keys. Default is OFF.

Note: See also USERKEYS.

HOST CONTROL

Javelin will allow different configuration files to be called by the Host application. To load a different configuration file, the host application must send an escape sequence to Javelin.

Load a configuration file with an S (satisfied) or F (fail) response from Javelin to the Host application:

```
Esc&oCLOAD <file>
```

<*cfile*> Name of the configuration file.

Load a configuration file without a response from Javelin to the Host application:

```
Esc&oFLOAD <cfile>
```

<*cfile*> Name of the configuration file.

HOST INITIATED FILE TRANSFERS

The supported commands are RECEIVE and S (send). The syntax for each is as follows:

Receive

```
RECEIVE <pcfile> FROM <host file> [ASCII][BINARY]
```

Example:

```
RECEIVE C:\AATEST\XXTEST.TXT FROM XXTEST ASCII
```

S (send)

```
S <pcfile> TO <host file> [ASCII][BINARY] REC=<size> [DELETE]
```

Example:

```
S XXTEST.TXT TO XXTEST.MARKASCII REC=80 DELETE
```

HOSTNAME

For a connection to the host, the node name or IP address must be configured:

```
HOSTNAME <"value">
```

<"value"> Host node name or IP address for non-encrypted versions. If you are using SSL Encryption, the node name or IP address of the JES system is used.

IDSTRING

For Terminal ID:

```
IDSTRING "<terminal id>"
```

<terminal id> Terminal ID the host program needs. HP Host programs check for 2392 and 70092 HP Terminals. The value must have quotes around it.

KEEPALIVE

```
KEEPALIVE <frequency in seconds>
```

A special NS/VT packet will be sent every time <seconds> pass without a transmission to the host. For example KEEPALIVE 60 would send a packet every time 60 seconds passed without a transmission to the host. This is primarily for users who need to stay connected but are being timed out due to inactivity.

LOGIN

```
LOGIN <string>
```

<string> The string that is sent at startup when the LOGINCHAR trigger is received. This command can be repeated up to 6 times. The string value will be sent, each time a trigger character is received. Each string is terminated with a CR.

Example:

```
LOGINCHAR 17  
LOGIN"HELLO user.acct,group"  
LOGIN "PassWord1"  
LOGIN "Password2"  
LOGIN "LISTF ,2"
```

LOGINCHAR

For required logon:

LOGINCHAR *<decimal value>*

<decimal value> ASCII decimal value of the character that is used to trigger the sending of the next login string. See *Character Set Codes*.

HP e3000 normally uses a DC1 trigger. In this case the setting would be as follows:

LOGINCHAR 17

UNIX normally uses a colon (:) as the trigger character. This setting should be as follows:

LOGINCHAR 58

MAP

For keyboard re-mapping:

MAP *<modifier>* *<PC key>* TO KEY *<Terminal key>*

<modifier> Modifier is the additional key pressed with the PC key. Optional values allowed are ALT, SHIFT, or CONTROL.

<PC key> One of the following values from the PC keyboard:

ADD	F4	F11	PAGEUP
DEL	F5	F12	RIGHT
DIVIDE	F6	HOME	SUBTRACT
DOWN	F7	INS	TAB
F1	F8	LEFT	UP
F2	F9	MULTIPLY	
F3	F10	PAGEDOWN	

<Terminal key> One of the following values:

BACKSPACE	INSERTCHAR
BACKTAB	INSERTLINE
BREAK	INSERTWRAP
CLEARLINE	LEFT
CLEARSCREEN	MENU
COMMA	PAGEDOWN
DELETE	PAGEUP
DELETECHAR	PRINT
DELETEWRAP	REMOVELINE
DOWN	RETURN
ENTER	RIGHT
F1	ROLLDOWN
F2	ROLLUP
F3	SELECT
F4	SOFTRESET
F5	STOP
F6	SYSTEM
F7	TAB
F8	UP
HARDRESET	USER
HOMEDOWN	USERMENU
HOMEUP	WIDTHTOGGLE

Example:

MAP SHIFT F2 TO ENTER

To obtain special characters that you may need, map local keys and key combinations as follows:

- Map to a Character
- Map to a String
- Map to Decimals values
- Map to a Command

Mapping to a Character

MAP <modifier> <PC key> TO CHAR <ascii character>

<modifier> Modifier is the additional key pressed with the PC key. Optional, values allowed are ALT, SHIFT, or CONTROL.

<PC key> Any PC key.

<ascii character> Any character 0-9 and A-Z upper or lower case.

Example:

MAP CONTROL F1 TO CHAR Z

Every time you press control+F1, Javelin will transmit the letter Z.

Mapping to a String

MAP <modifier> <PC key> TO STRING "<string>"

<modifier> Modifier is the additional key pressed with the PC key. Optional values allowed are ALT, SHIFT, or CONTROL.

<PC key> Any PC key.

<string> ASCII string of characters 0-9 and A-Z upper or lower case.

Example:

MAP F3 TO STRING "This a ASCII string 1234567890"

Every time F3 is press Javelin will transmit the value 'This is a ASCII string 1234567890'.

Map to a string of Decimals values:

MAP <modifier> <PC key> TO DECIMALS <value>

<modifier> Modifier is the additional key pressed with the PC key. Optional values allowed are ALT, SHIFT, or CONTROL.

<PC key> Any PC key.

<value> Decimal value of the data to be sent. Each value must be separated by a space.

Example:

```
MAP CONTROL F4 TO DECIMALS 72 69 76 76 79 32 77 71 82 46 83 89 83 13
```

This will transmit 'HELLO MGR.SYS' followed by a Character Return when Ctrl-F4 is pressed. For further information see *Character Set Codes*.

Mapping to a Command:

```
MAP <modifier> <PC key> TO <command>
```

<modifier> Modifier is the additional key pressed with the PC key. Optional values allowed are ALT, SHIFT, or CONTROL.

<PC key> Any PC key.

<command> Must be one of the following:

CLEARLINE	INSERTCHAR
CLEARSCREEN	INSERTLINE
DELETE	PAGEDOWN
DELETECHAR	PAGEUP
HOMEDOWN	PRINT
HOMEUP	REMOVELINE

NSVT

Protocol type is needed:

NSVT <value>

<value> Value set to ON if protocol is NSVT or OFF if protocol is TELNET.

PACKFILE

This should be used under the direction of Minisoft's technical support.

PACKFILE [fname]

[fname] The name of the file that contains the packet capture information. This file path should be fully qualified. Note, in the example below two back slashes (\\) instead of one, is required for Javelin to recognize this command.

Example:

PACKFILE "D:\\TEST.WPK"

PORT

Port number to connect to:

PORT <value>

<value> Port number that connects to the Host or JES system. Port 1570 for NSVT or port 23 for TELNET.

For SSL Encryption, port is set in the JES run statement.

PRINTERFONT

PRINTERFONT <value>

<value> Fixed pitch font.

Example:

PRINTERFONT "Courier New"

To control the quality of the print, bold font can be used for printing (default is OFF):

PRINTERBOLD <value>

<value> Set value to ON to have the print font bold.

PRINTING

To support Host controlled printing (Slave Printing) in Java there are limitations:

1. The user can only set the format of the printing (Portrait or Landscape) at the opening of the printer.
2. Hosts escape sequences controlling the font selection and the format such as Portrait or Landscape cannot be used in Java.

To overcome this limitation, Javelin needs information on how the printed page should look. The following commands will be needed to set the framing of the printed page:

Printer Portrait Columns

PRINTER PORTRAIT COLUMNS <cols>

<cols> Maximum number of columns allowed for portrait printing.

Example:

PRINTER PORTRAIT COLUMNS 80

Printer Landscape Columns

```
PRINTER LANDSCAPE COLUMNS <cols>
```

<cols> Maximum number of columns allowed for landscape printing.

Example:

```
PRINTER LANDSCAPE COLUMNS 132
```

Printer Portrait Calcrows

```
PRINTER PORTRAIT CALCROWS <rows>
```

<rows> Maximum number of rows allowed for portrait printing.

Example:

```
PRINTER PORTRAIT CALCROWS 55
```

Printer Landscape Calcrows

```
PRINTER LANDSCAPE CALCROWS <rows>
```

<rows> Maximum number of rows allowed for landscape printing.

Example:

```
PRINTER LANDSCAPE CALCROWS 44
```

For Java to determine the font size to be used by Javelin for printing, the value of Calcrows and Columns is used. Changing their values will control the size of the font.

PRINTMARGIN

PRINTMARGIN <number of columns>

This is primarily for Linux users. When doing screen prints the left margin is padded with the number of spaces specified.

PRTIME

Sets the time for the printer to wait before closing the print job:

PRTIME <*seconds*>

<*seconds*> Number of seconds to be idle before closing the print job and passing the buffer to the print head.

RETENTER

Sets the Return key to an Enter key (default OFF):

RETENTER <*value*>

<*value*> Set value to ON for the Return key to be an Enter key.

ROWS

Sets the number of rows (default 24):

ROWS <*row*>

<*row*> Number of rows Javelin will use in its display.

SCRDELAY

Causes a delay after changing screen size (for example 80 to 132) allowing Sun Java to catch up. The following example waits 2 seconds:

```
SCRDELAY 2000
```

SCREEN80 and SCREEN132

When Javelin starts, it will detect the screen size and automatically pick a font and window size to fit. Java does not always make the correct choices for all screens and browsers. To override the default choices and specify your own font and window size, use the SCREEN80 and SCREEN132 commands in the configuration file.

For example, suppose that when Javelin is running on a 640 X 800 screen in 80 column mode you want to use Courier 10 in a window 575 X 415 without bold. You would enter :

```
SCREEN80 640 575 415 Courier 10 OFF
```

The format of these commands is as follows:

To specify font and size when in 80 column mode:

```
SCREEN80 <screen size> <Window width> <window height> <font name>  
<font size> <ON for bold, OFF for normal>
```

To specify font and size when in 132 column mode:

```
SCREEN132 <screen size> <Window width> <window height> <font name>  
<font size> <ON for bold, OFF for normal>
```

<column> 80 or 132 width display.

<pixels> First size of the Desktop Area.

<width> Desired display width of the Javelin Window.

<height> Desired display height of the Javelin Window.

** Fixed pitch font name used by Javelin.

** Font size for Javelin display.

<bold> Value set to ON or OFF for the Javelin display to be bold.

Example:

```
SCREEN80 640 575 415 Courier 10 OFF
SCREEN80 800 804 568 Courier 15 OFF
SCREEN80 1024 976 690 Courier 20 OFF
SCREEN80 1152 1136 855 Courier 24 ON
SCREEN80 1280 1220 865 Courier 25 ON
SCREEN132 800 804 568 Courier 10 OFF
SCREEN132 1024 976 690 Courier 12 OFF
SCREEN132 1152 1136 855 Courier 14 ON
```

The SCREEN command should be repeated for each size of display pixels that the users may be using. If the applications use 80 columns only the first five lines from the example will be needed.

Note: The above example uses the same display width for 80 and 132 columns so only the fonts change when going between 80 and 132 columns. This is not necessary but most users prefer this effect.

SER9

Specifies a string identifying WS92 as the terminal emulator.

```
SER9 <serial number>
```

<serial number> Default value is *MS92 BEST*.

SER14

Specifies a string identifying WS92 as the terminal emulator.

SER14 <serial number>

<serial number> Default value is *MS92 IS BETTER*.

STRAP

For strap settings:

STRAP <n> <status>

<n> A, B, C, D, G, or H.

<status> ON or OFF. Note, the host program normally uses the default straps. Using this setting without special instructions will cause your host application to run incorrectly.

TRACE ON

Use when advised by Minisoft. Additional information is displayed in the Java Console.

TRANSLATION TABLES

Javelin uses four Character Set Translation Tables to convert between different character sets on the PC and host computer. The size of the tables is always 256 bytes. The tables must reside on the web server in the same directory as your Javelin .CAB and .JAR files.

HOSTCHARS *<filename>*
UPLOADCHARS *<filename>*

<filename> Name of the file that has the Host Character Set.

PCCHARS *<filename>*
DOWNLOADCHARS *<filename>*

<filename> Name of the file that contains the PCs Character Set.

TYPEAHEAD

Allows the user to type ahead:

TYPEAHEAD *<value>*

<value> ON
OFF

Default is OFF.

USERKEYS

Displays HP User Defined Function Keys at startup. If a configuration file does not contain USERKEYS, the HP Terminal Mode Keys will then display.

USERKEYS

Note: See also HIDEFKEYS.

VSCROLL

Sets the scroll bar on the right side of the display window (default is no Scroll bars):

```
VSCROLL<columns> ON
```

<columns> Number of columns Javelin displays (80 or 132).

Example:

```
VSCROLL80 ON  
VSCROLL132 ON
```

Javelin Menus

Javelin consists of the following seven menus:

File	Edit
Function Keys	Trouble
Special Keys	Help

File Menu

The File menu includes the following items:

Download - Allows you to download a file from the HP e3000. This item is only displayed if file transfers are allowed.

Upload - Allows you to upload a file to the HP e3000. This item is only displayed if file transfers are allowed.

Exit - Closes Javelin.

Edit Menu

The Edit menu includes the following items:

Clear Screen – Deletes everything from the current cursor position to the end of display memory.

Clear Line – Selecting this item deletes all characters immediately above the cursor and all characters to the right of it on that line.

Insert Line – Inserts a blank line above the line the cursor is currently on, and moves the cursor to the left margin on the blank line.

Delete Line – Deletes the entire line the cursor is on, and moves the cursor to the left margin on the following line.

Copy Selection, Copy Screen, Copy All, and Paste – Functions the way Windows Copy and Paste commands do.

Function Keys

The Function keys menu has the following four items:

User Keys - Changes the keys shown at the bottom of the Javelin window to user keys, F1-F8.

Modes Keys - Changes the keys shown at the bottom of the Javelin window to modes keys.

System Keys - Changes the keys shown at the bottom of the Javelin window to four system keys.

Define - Brings up the Define window. This item allows you to change the attributes and labels of the user keys and defines (or program) new character strings for them to generate.

1. Using the tab key to move through the fields, position the cursor at the function key you wish to program (the first programmable field for each function key is the attribute field, which is defaulted to **T**).
2. Press F2 Next Choice or F3 Previous Choice to set the key's attribute. Attribute choices are as follows:
 - N** (Normal keyboard input): This string is treated exactly as if it had been entered from the keyboard. A carriage return is not automatically transmitted.
 - T** (Transmit-only): Javelin transmits the user key string to the host computer and automatically appends a carriage return.
 - L** (Local-only): The user key string is executed locally but is not transmitted to the host system.
3. Press the tab key to move to the Label fields.
4. In the first Label field, enter up to eight characters as you want them to appear on the top line of the key's label in the function key window. If the label continues to the second line, add this text in the second field, using the tab key.
5. Press the tab key to move to the program entry field.
6. Using no more than 80 characters, enter the exact character string the user key is to generate. Include escape sequences and ASCII control codes within the string by pressing F7 Display Functions before entering the control codes. Disable display functions mode immediately after entering the desired control code by pressing F7 again.

7. When you have finished defining the function keys, press F8 Exit Config. The keys you defined should appear across the bottom of the screen, in the function key window.

Note: These settings are only good for the current session, defining User Keys in this manner will not be saved.

Trouble Menu

Use the Trouble menu items only under the direction of Minisoft technical support.

Special Keys

The Special Keys menu has the following items:

Hard Reset – This option has the same effect as turning the terminal's power off and then back on. A hard reset halts any device operations currently in progress, enables the keyboard (if disabled), clears all display memory, clears any existing error conditions and removes the error message display (if present) from the bottom of the screen, halts any datacomm transfers currently in progress, and clears the datacomm buffer.

Soft Reset – Selecting this option halts any device operations currently in progress, enables the keyboard (if disabled), clears any existing error conditions and removes the error message display (if present) from the bottom of the screen, disables display functions mode (if enabled), turns record mode off if it is on, halts any datacomm transfers currently in progress, and clears the datacomm buffer.

Break – Sends a break signal to the host computer.

Insert Mode – This item toggles between insert mode and overtype mode.

Enter (F12) – F12 performs the same function as pressing the Enter key on an HP terminal.

Toggle 80/132 column mode - Toggles between 80 and 132 column mode.

Print Menu

The Print menu contains the following items:

Print Memory from Cursor — Prints the portion of the display memory from the current cursor position to the end.

Print All Display Memory — Prints the entire contents of the display memory.

Print to End of Page — Prints the current visible screen from the current cursor position to the end of the page.

Print Line — Prints the line where the cursor is positioned.

Print Current Page — Prints all of the page that is currently displayed.

Print Selection — Select the text with the mouse to print a block of text.

Advance Page — Sends a form feed command to the printer.

Advance Line — Sends a line feed command to the printer.

Close Print Job — Halts the current Javelin print job and sends the printer's buffer to the printer.

Logging Top and Bottom

Sending data to the printer as the display scrolls, depending upon whether the data is being sent from the beginning or the end of the scrolling region.

Log Top

To Log Top:

1. Select Log Top from the Print menu.
2. Continue your session. Javelin sends data to the printer as it scrolls off the top of the display memory.
3. When the data you want to print has scrolled off the top, select Log Top again to deactivate the command.
4. To flush any remaining data from the printer select Advance Page or Close Print Job from the Print menu to send a form feed command to the printer. The printer prints any remaining data.

Log Bottom

To Log Bottom:

1. Select Log Bottom from the Print menu.
2. Continue your session. Javelin sends data to the printer as a new line appears, that is terminated by a Line Feed (LF) .
3. When the data you want to print has been printed to the screen, select Log Bottom again to deactivate the command.
4. To flush any remaining data from the printer, select Advance Page or Close Print Job from the Print menu to send a form feed command to the printer. The printer prints any remaining data.

Help Menu

The Help menu contains the About selection which lists the version number of Javelin. To remove the About display from the screen, you must click the OK button in the display; pressing Enter or ESC will not remove it.

Character Set Codes

Roman 9 Character Set Codes				
ASCII	HEX	DEC	OCT	DESCRIPTION
NULL	00	0	000	Null
SOH	01	1	001	Start of heading
STX	02	2	002	Start of text
EXT	03	3	003	End of text
EOT	04	4	004	End of transmission
ENQ	05	5	005	Enquiry
ACK	06	6	006	Acknowledge
BEL	07	7	007	Bell
BS	08	8	010	Backspace
HT	09	9	011	Horizontal tabulation
LF	0A	10	012	Line feed
VT	0B	11	013	Vertical tabulation
FF	0C	12	014	Form Feed
CR	0D	13	015	Carriage Return
SO	0E	14	016	Shift out
SI	0F	15	017	Shift in
DLE	10	16	020	Data link escape
DC1	11	17	021	Device control 1 or X-ON
DC2	12	18	022	Device control 2
DC3	13	19	023	Device control 3 or X-OFF
DC4	14	20	024	Device control 4

ASCII	HEX	DEC	OCT	DESCRIPTION
NAK	15	21	025	Negative acknowledge
SYN	16	22	026	Synchronous idle
ETB	17	23	027	End of transmission block
CAN	18	24	030	Cancel
EM	19	25	031	End of medium
SUB	1A	26	032	Substitute
ESC	1B	27	033	Escape
FS	1C	28	034	File separator
GS	1D	29	035	Group separator
RS	1E	30	036	Record separator
US	1F	31	037	Unit separator
	20	32	040	Space
!	21	33	041	Exclamation point
"	22	34	042	Quotation mark
#	23	35	043	Number sign (hash mark)
\$	24	36	044	Dollar sign
%	25	37	045	Percent sign
&	26	38	046	Ampersand
'	27	39	047	Apostrophe (closing single quote)
(28	40	050	Opening parenthesis
)	29	41	051	Closing parenthesis
*	2A	42	052	Asterisk
+	2B	43	053	Plus
,	2C	44	054	Comma
-	2D	45	055	Hyphen (minus)
.	2E	46	056	Period (point)
/	2F	47	057	Slant (solidus)

ASCII	HEX	DEC	OCT	DESCRIPTION
0	30	48	060	Zero
1	31	49	061	One
2	32	50	062	Two
3	33	51	063	Three
4	34	52	064	Four
5	35	53	065	Five
6	36	54	066	Six
7	37	55	067	Seven
8	38	56	070	Eight
9	39	57	071	Nine
:	3A	58	072	Colon
;	3B	59	073	Semicolon
<	3C	60	074	Less than sign
=	3D	61	075	Equal sign
>	3E	62	076	Greater than sign
?	3F	63	077	Question mark
@	40	64	100	Commercial at
A	41	65	101	Uppercase A
B	42	66	102	Uppercase B
C	43	67	103	Uppercase C
D	44	68	104	Uppercase D
E	45	69	105	Uppercase E
F	46	70	106	Uppercase F
G	47	71	107	Uppercase G
H	48	72	110	Uppercase H
I	49	73	111	Uppercase I
J	4A	74	112	Uppercase J

ASCII	HEX	DEC	OCT	DESCRIPTION
K	4B	75	113	Uppercase K
L	4C	76	114	Uppercase L
M	4D	77	115	Uppercase M
N	4E	78	116	Uppercase N
O	4F	79	117	Uppercase O
P	50	80	120	Uppercase P
Q	51	81	121	Uppercase Q
R	52	82	122	Uppercase R
S	53	83	123	Uppercase S
T	54	84	124	Uppercase T
U	55	85	125	Uppercase U
V	56	86	126	Uppercase V
W	57	87	127	Uppercase W
X	58	88	130	Uppercase X
Y	59	89	131	Uppercase Y
Z	5A	90	132	Uppercase Z
[5B	91	133	Opening square bracket
\	5C	92	134	Reverse slant
]	5D	93	135	Closing square bracket
^	5E	94	136	Caret (circumflex)
_	5F	95	137	Underscore (low line)
'	60	96	140	Opening single quote
a	61	97	141	Lowercase a
b	62	98	142	Lowercase b
c	63	99	143	Lowercase c
d	64	100	144	Lowercase d
e	65	101	145	Lowercase e

ASCII	HEX	DEC	OCT	DESCRIPTION
f	66	102	146	Lowercase f
g	67	103	147	Lowercase g
h	68	104	150	Lowercase h
i	69	105	151	Lowercase i
j	6A	106	152	Lowercase j
k	6B	107	153	Lowercase k
l	6C	108	154	Lowercase l
m	6D	109	155	Lowercase m
n	6E	110	156	Lowercase n
o	6F	111	157	Lowercase o
p	70	112	160	Lowercase p
q	71	113	161	Lowercase q
r	72	114	162	Lowercase r
s	73	115	163	Lowercase s
t	74	116	164	Lowercase t
u	75	117	165	Lowercase u
v	76	118	166	Lowercase v
w	77	119	167	Lowercase w
x	78	120	170	Lowercase x
y	79	121	171	Lowercase y
z	7A	122	172	Lowercase z
{	7B	123	173	Opening brace (curly bracket)
	7C	124	174	Vertical line
}	7D	125	175	Closing brace (curly bracket)
~	7E	126	176	Tilde
	7F	127	177	Delete (rubout)
	80	128	200	--to be defined--

ASCII	HEX	DEC	OCT	DESCRIPTION
	81	129	201	--to be defined--
	82	130	202	--to be defined--
	83	131	203	--to be defined--
	84	132	204	--to be defined--
	85	133	205	--to be defined--
	86	134	206	--to be defined--
	87	135	207	--to be defined--
	88	136	210	--to be defined--
	89	137	211	--to be defined--
	8A	138	212	--to be defined--
	8B	139	213	--to be defined--
	8C	140	214	--to be defined--
	8D	141	215	--to be defined--
	8E	142	216	--to be defined--
	8F	143	217	--to be defined--
	90	144	220	--to be defined--
	91	145	221	--to be defined--
	92	146	222	--to be defined--
	93	147	223	--to be defined--
	94	148	224	--to be defined--
	95	149	225	--to be defined--
	96	150	226	--to be defined--
	97	151	227	--to be defined--
	98	152	230	--to be defined--
	99	153	231	--to be defined--
	9A	154	232	--to be defined--
	9B	155	233	--to be defined--

ASCII	HEX	DEC	OCT	DESCRIPTION
	9C	156	234	--to be defined--
	9D	157	235	--to be defined--
	9E	158	236	--to be defined--
	9F	159	237	--to be defined--
	A0	160	240	--to be defined--
À	A1	161	241	Uppercase A grave accent
Â	A2	162	242	Uppercase A circumflex
È	A3	163	243	Uppercase E grave accent
Ê	A4	164	244	Uppercase E circumflex
Ë	A5	165	245	Uppercase E umlaut or diaeresis
Î	A6	166	246	Uppercase I circumflex
Ï	A7	167	247	Uppercase I umlaut or diaeresis
´	A8	168	250	Acute accent
`	A9	169	251	Grave accent
^	AA	170	252	Circumflex accent
"	AB	171	253	Umlaut (diaeresis) accent
~	AC	172	254	Tilde accent
Û	AD	173	255	Uppercase U grave accent
Û	AE	174	256	Uppercase U circumflex
₣	AF	175	257	Italian lira symbol
—	B0	176	260	Over line (high line)
Ý	B1	177	261	Uppercase Y acute accent
ý	B2	178	262	Lowercase y acute accent
°	B3	179	263	Degree (ring)
Ç	B4	180	264	Uppercase C cedilla
ç	B5	181	265	Lowercase c cedilla
Ñ	B6	182	266	Uppercase N tilde

ASCII	HEX	DEC	OCT	DESCRIPTION
ñ	B7	183	267	Lowercase n tilde
¡	B8	184	270	Inverse exclamation mark
¿	B9	185	271	Inverse question mark
€	BA	186	272	EURO symbol
£	BB	187	273	British pound sign
¥	BC	188	274	Japanese yen symbol
§	BD	189	275	Section sign
f	BE	190	276	Dutch guilder symbol
¢	BF	191	277	U.S. cent symbol
â	C0	192	300	Lowercase a circumflex
ê	C1	193	301	Lowercase e circumflex
ô	C2	194	302	Lowercase o circumflex
û	C3	195	303	Lowercase u circumflex
á	C4	196	304	Lowercase a acute accent
é	C5	197	305	Lowercase e acute accent
ó	C6	198	306	Lowercase o acute accent
ú	C7	199	307	Lowercase u acute accent
à	C8	200	310	Lowercase a grave accent
é	C9	201	311	Lowercase e grave accent
ò	CA	202	312	Lowercase o grave accent
ù	CB	203	313	Lowercase u grave accent
ä	CC	204	314	Lowercase a umlaut or diaeresis
ë	CD	205	315	Lowercase e umlaut or diaeresis
ö	CE	206	316	Lowercase o umlaut or diaeresis
ü	CF	207	317	Lowercase u umlaut or diaeresis
Å	D0	208	320	Uppercase A degree
î	D1	209	321	Lowercase i circumflex

ASCII	HEX	DEC	OCT	DESCRIPTION
Ø	D2	210	322	Uppercase O crossbar
Æ	D3	211	323	Uppercase AE ligature
å	D4	212	324	Lowercase a degree
í	D5	213	325	Lowercase i acute accent
ø	D6	214	326	Lowercase o crossbar
æ	D7	215	327	Lowercase ae ligature
Ä	D8	216	330	Uppercase A umlaut or diaeresis
ï	D9	217	331	Lowercase i grave accent
Ö	DA	218	332	Uppercase O umlaut or diaeresis
Û	DB	219	333	Uppercase U umlaut or diaeresis
É	DC	220	334	Uppercase E acute accent
ï	DD	221	335	Lowercase i umlaut or diaeresis
ß	DE	222	336	Sharp s
Ô	DF	223	337	Uppercase O circumflex
Á	E0	224	340	Uppercase A acute accent
Ã	E1	225	341	Uppercase A tilde
ã	E2	226	342	Lowercase a tilde
Ð	E3	227	343	Uppercase D with stroke
ð	E4	228	344	Lowercase d with stroke
Í	E5	229	345	Uppercase I acute accent
ì	E6	230	346	Uppercase I grave accent
Ó	E7	231	347	Uppercase O acute accent
Ò	E8	232	350	Uppercase O grave accent
Õ	E9	233	351	Uppercase O tilde
õ	EA	234	352	Lowercase o tilde
Š	EB	235	353	Uppercase S with caron
š	EC	236	354	Lowercase s with caron

ASCII	HEX	DEC	OCT	DESCRIPTION
Ú	ED	237	355	Uppercase U acute accent
ÿ	EE	238	356	Uppercase Y umlaut or diaeresis
ÿ	EF	239	357	Lowercase y umlaut or diaeresis
þ	F0	240	360	Uppercase Thorn
þ	F1	241	361	Lowercase thorn
	F2	242	362	--undefined--
	F3	243	363	--undefined--
	F4	244	364	--undefined--
	F5	245	365	--undefined--
—	F6	246	366	Long dash (horizontal bar)
¼	F7	247	367	One fourth (one quarter)
½	F8	248	370	One half
	F9	249	371	Feminine ordinal indicator
	FA	250	372	Masculine ordinal indicator
«	FB	251	373	Opening guillemets (angle quotes)
•	FC	252	374	Solid
»	FD	253	375	Closing guillemets (angle quotes)
	FE	254	376	Plus/minus sign
	FF	255	377	--undefined--

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