

From the HP 3000 to the Web Using Suprtool



A Robelle Tutorial

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Electronic mail, the World Wide Web, and Java: the Internet and its technologies are now part of our lives. We cannot ignore them anymore because they can now do such amazing things. Everyone is doing something on the Internet with various degrees of success.

Getting access to a wealth of information from your computer at home is easy. Getting that information ready and available for everyone else to see is not so easy. And, of course, your boss wants it ready by yesterday. You have to become knowledgeable about networks and then learn new languages.

Suprtool and its STExport companion can help you produce Web documents in a snap.

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We will give you an overview of HTML, the language behind WWW documents: what is it, what does it look like, and some basic syntax.

We will then focus on Suprtool and STExport, and explain how you can use them to quickly produce Web pages.

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References

What is HTML?

- HyperText Markup Language
- Typically used in World Wide Web documents
- Logical description of a document
- Simple text files
- Free-format documents
- Display-device independent language

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HTML stands for HyperText Markup Language. This is the language used in all World Wide Web documents. If you have ever used a graphical browser, such as Netscape's Navigator or Microsoft's Internet Explorer, you have witnessed the power of HTML.

You can jump from one document to another with such ease. There can be nice graphics (animated or not), and there is all that text to read. Text formatting is simple yet powerful.

With HTML, you provide a logical view of a document. You describe the document header and main section. You sprinkle a little text enhancement here and there. Web documents, which are free-format text files, can be created with the simplest editor.

The browsers will take care of the physical layout, choosing the font type and size, and so forth. They are the ones that know which display device you have; HTML does not have to know.

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Basic HTML

- Uses keywords to describe document and text attributes
 - h1 header level 1
 - b bold
- Keywords enclosed between a less-than (<) and a greater-than (>) sign are called tags
 - <h1> header level 1
 - bold
- Uses tags to identify:
 - document sections (headers etc.)
 - text display enhancements (bold etc.)

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You do not need a special program to read or write a Web document source file. Everything is coded in printable ASCII characters (letters, numbers, punctuation, and arithmetic characters).

To format a document, you can choose among a series of predefined keywords. Basic keywords allow you to identify parts of the document (header, body etc.) and items within a list, and to specify display enhancements (bold, italic etc.). There is a set of keywords for advanced features, such as hypertext links and graphics.

To identify these keywords as text formatting instructions, not as simple text, you have to enclose them between a less-than (<) and a greater-than sign (>). This combination is known as a tag.

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Tags come in pairs

- Use a keyword to indicate the start of a formatting instruction
 - ``Text will be bold from here...
- Use same keyword prefixed with a slash to end the formatting
 - ...up to here``

Text will be bold from here.....up to here
- Keywords are not case-sensitive
- Some keywords can have qualifiers
 - `<Table border=1>`
 - `<TD align=right>`

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Keywords used as tags are not case-sensitive; `<table>` is the same as `<TABLE>`, `<Table>`, or any other combination. To mark the beginning of a format, you simply type in the tag. For example,

`` {start bold text}

From this point, the text will use the specified format.

To mark the end of a format, you use the same keyword prefixed with a slash (/), also enclosed in the tag delimiters.

`` {end bold text}

Some tags can carry additional keywords to further qualify the formatting you want.

borders of #1 thickness }	<code><table border=1></code>	{put
alignment of text within cell }	<code><td align=right></code>	{right

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Extract the data with Suprtool

- Create a self-describing file with all the fields you need
 - > Get d-sales
 - > Define total-amt, 1, 4, integer
 - > Item purch-date, date, ccyymmdd
 - > Item product-price, decimal, 2
 - > Item total-amt, decimal, 2
 - > Extract supplier-name, product-no, purch-date, product-price
 - > Extract sales-qty, total-amt = product-price * sales-qty
 - > Output salefile, Link
 - > Xeq

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You can use STExport to generate an HTML document with some basic formatting. STExport can only read data from a self-describing file created with Suprtool.

STExport will use every piece of information in the file's mini-dictionary to produce the output. If you have date or numeric fields, use Suprtool's Item command to specify the date format and the number of implied decimals. The final document will be even more readable.

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Format the data with STExport

- Format the self-describing file using STExport's HTML command
 - > Export
 - \$ Input salefile
 - \$ Date yyymmdd "/"
 - \$ HTML Preformatted Title "Sales (Preformatted)"
Heading "Sales (Pre header)"
 - \$ Heading Fieldnames
 - \$ Output htmlfile
 - \$ Xeq

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With STExport, you can create an HTML document with only three commands: Input, HTML and Xeq (or Exit).

However, you can use other STExport commands to further customize and improve the appearance of the final document.

On the HTML command, you can use the Title option and specify the document title. If you do not specify a title, STExport will use "This is the Title."

The Heading option allows you to specify a level-1 header. This string will be put in the body section with an "<h1>" tag. There is no default value.

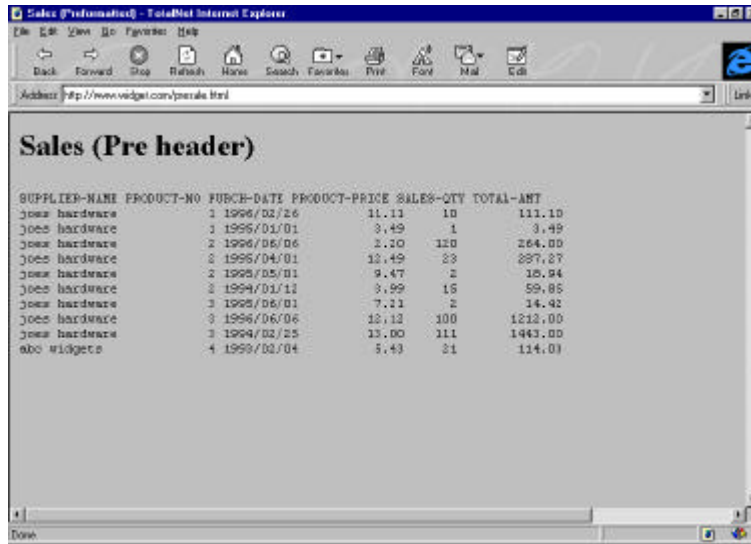
By default, STExport will not output column headings. You can use the Heading command to either get the actual field names (Heading Fieldnames) or to specify your own headings (Heading Column "string").

If you have date fields, you can use the Date command to specify the output format and a unit separator (Date YYYYMMDD "/").

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Preformatted output



The screenshot shows a web browser window titled "Sales (Preformatted) - TotalNet Internet Explorer". The address bar shows "http://www.vadjet.com/perade.html". The main content area displays a preformatted table with the following data:

SUPPLIER-NAME	PRODUCT-NO	PURCH-DATE	PRODUCT-PRICE	SALES-QTY	TOTAL-AMT
joes hardware	1	1996/02/26	11.11	10	111.10
joes hardware	3	1996/01/01	3.49	1	3.49
joes hardware	2	1996/06/06	2.20	120	264.00
joes hardware	2	1996/04/01	12.49	23	287.27
joes hardware	2	1996/05/01	9.47	2	18.94
joes hardware	3	1994/01/12	3.99	15	59.85
joes hardware	3	1996/06/01	7.21	2	14.42
joes hardware	3	1996/06/06	12.12	100	1212.00
joes hardware	3	1994/02/25	13.00	111	1443.00
abc Widgets	4	1999/02/04	5.43	21	114.03

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Here is the Preformatted document as displayed by Microsoft's Internet Explorer.

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References

“Preformatted” source document

```
<html >
<head>
<title>Sales (Preformatted)</title>
</head>
<body>
<h1>Sales (Pre header)</h1>
<pre>
SUPPLIER- NAME PRODUCT- NO PURCH- DATE PRODUCT- PRICE SALES- QTY TOTAL- AMT
joes hardware          1 1996/02/26          11. 11      10      111. 10
joes hardware          1 1995/01/01           3. 49       1       3. 49
. . .                  { more data lines }
joes hardware          3 1994/02/25          13. 00     111     1443. 00
abc widgets            4 1993/02/04           5. 43      21     114. 03
</pre>
</body>
</html >
```

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Here is the actual HTML source. STExport writes all HTML commands required to produce a valid Web document.

In this example, we have specified a document Title and Heading. We requested “Heading Fieldnames” to get the actual data names on top of each column.

Notice the column headings do not align properly with the data. This is because STExport treats field names as data. It outputs each name separated by a space from each other. Because the field names do not have the same length as the data values, they do not align. To get around that problem, you would need to use the Heading command with the Add or Column option and align them manually.

Character fields, such as supplier-name, are left-justified. All numeric fields are right-justified.

The date field contains slash characters between the year, month, and day. Numeric fields with implied decimal places now carry a period in the appropriate position.

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Tags used by STExport

- In both preformatted and table documents:
 - `<html>` informs browsers that statements in the file follow HTML syntax
 - `<head>` contains the header section of the document
 - `<title>` is the document title
 - `<body>` contains the actual data
 - `<h1>` defines the level-1 header
- Only preformatted uses the `<pre>` tag

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Both Preformatted and Table formats will contain `<html>`, `<head>`, `<title>`, `<body>` and `<h1>` tags as required. Because browsers can display different types of files, they have to be told when the document contains HTML statements and syntax. The `<html>` tag does just that.

The `<head>` tag indicates the beginning of the document header section. This section will contain only one tag, `<title>`. This is the string entered in the Title option of STExport's HTML command. Graphical browsers typically put this string on the window title bar.

To indicate the start of the document text, you must have a `<body>` tag. If you specified a heading on the HTML command, there will be an `<h1>` tag.

The Preformatted option will generate a simple `<pre>` tag followed by the actual data. This means the data is already laid out correctly. Browsers will not try to format regular text (not tagged) and will use a fixed-size font up to the `</pre>` tag.

Preformatted is equivalent to requesting "Columns Fixed", "Quote None", and "Delimiter Space" in STExport.

Columns will be assigned their maximum length with a space between each one. There will not be quotes around character fields.

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STExport Table option

- HTML Table [Document Title] [Header]
- Data section contains table-related tags (Table, TH, TR, TD)
- Uses proportional font
- Columns displayed in individual cells
- Puts borders around each cell

\$ HTML Table Title "Sales (Table)" Head "Sales (Table header)"

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To put the same information in a Table format, we have repeated the STExport commands from page 7, changing only the HTML command.

The Table option uses the table formatting feature of HTML. It uses a number of tags to identify column headings and data cells.

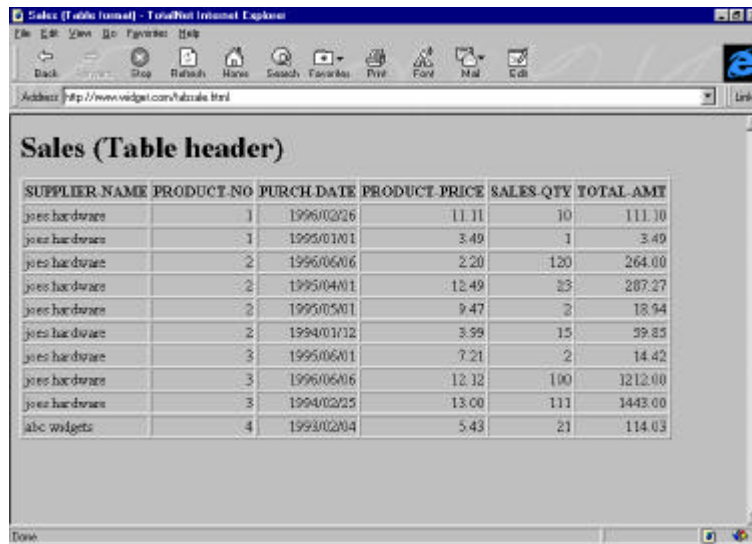
Text and values within the table cells are displayed using a proportional font.

Column headings and data values are displayed in individual cells. All table cells have borders around them.

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References

Table output



SUPPLIER NAME	PRODUCT-NO	PURCH-DATE	PRODUCT-PRICE	SALES-QTY	TOTAL-AMT
joes hardware	1	1996/02/26	11.11	10	111.10
joes hardware	1	1995/01/01	3.49	1	3.49
joes hardware	2	1996/06/06	2.20	120	264.00
joes hardware	2	1995/04/01	12.49	23	287.27
joes hardware	2	1995/05/01	9.47	2	18.94
joes hardware	2	1994/01/12	3.99	15	59.85
joes hardware	3	1995/06/01	7.21	2	14.42
joes hardware	3	1996/06/06	12.12	100	1212.00
joes hardware	3	1994/02/25	13.00	111	1443.00
abc widgets	4	1993/02/04	5.43	21	114.03

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This is the Table option document as displayed by Microsoft's Internet Explorer.

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References

“Table” source document

```

<html>
<head>
<title>Sales (Table)</title>
</head>
<body>
<h1>Sales (Table header)</h1>
<table border=1>
<tr><th>SUPPLIER-NAME<th>PRODUCT-NO<th>PURCH-DATE<th>PRODUCT-PRICE<th>SALES-QTY<th>TOTAL-
AMT</tr>
<tr><td>joes hardware <td align=right> 1<td align=right>1996/02/26<td align=right>
11.11<td align=right> 10<td align=right> 111.10</tr>
... { more data lines }
<tr><td>joes hardware <td align=right> 3<td align=right>1994/02/25<td align=right>
13.00<td align=right> 111<td align=right> 1443.00</tr>
<tr><td>abc widgets <td align=right> 4<td align=right>1993/02/04<td align=right>
5.43<td align=right> 21<td align=right> 114.03</tr>
</table>
</body>
</html>

```

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The start of a table construct is identified with the <table> tag. This tag may contain a “border=1” formatting option, which instructs the browser to put a border of thickness “1” around all table cells.

Each row of a table is identified by a <tr> tag. All fields between a <tr> and a </tr> tag (or another <tr>) will be displayed on the same line.

A table row is divided into individual cells by either a <th> or a <td> tag. The <th> tag is used to identify column headings. As headings, the text in these cells usually has display enhancements. A cell contains all the text between a <th> and a </th> tag (or another <th>).

The <td> tag is used to identify data cells. A cell contains all the text between a <td> and a </td> tag (or another <td>). Data cells usually do not have special display enhancements.

The <td> tags for numeric fields also carry the option for right justification (align=right). Other fields are not right-justified because left justification is the default.

Notice that there are no </th> or </td> tags. Browsers will just assume the end of a cell when it encounters the next <th> or <td> tag.

Even though STExport has preserved leading and trailing spaces in each field, browsers will remove them as needed.

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References

Changing column headings

- Use Heading command to create custom column headings
- With Preformatted option
 - Heading "string" starts new headings
 - Heading Add "string" appends to heading already defined
 - Manually align strings using spaces or other characters

```
Heading "Customer      First name"
Heading Add "  Last name      Address      City"
```

- With Table option
 - Heading Column "string" defines column headings

```
Heading Column "Customer"
Heading Column "First name"
```

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If you do want to create custom column headings, you can use STExport's Heading command.

You can use Heading "string" followed by a series of Heading Add "string" commands to build your heading line. This is a useful technique if you are using the Preformatted option. If you use this technique with the Table format, all entered strings will be processed as a data value.

You can also use Heading Column "string." Each string will be put in its own <th> cell.

Heading Add and Heading Column commands cannot be used together. If you use either one of these commands with the Preformatted option, you will have to manually align the headings with the values by inserting the appropriate number of spaces.

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References

Static versus dynamic pages

- Static pages generated regularly
- Use Common Gateway Interface (CGI) scripts with your Web server to generate Web pages on demand
 - <http://www.robelle.com/support/examples.html>

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If you need to display static information, all you need to do is run a Suprtool/STExport task to generate a Web document. You could execute that task on a regular basis to refresh the content.

If you need to display dynamic information, most Web servers support Common Gateway Interface (CGI) scripts. This allows a browser to “request” execution of a script or command file on the host machine. These scripts are typically written in Perl.

Such a script would run Suprtool and generate the Web document “on the fly.” Using HTML’s input forms and a CGI script, you could make your data selection as simple or as complex as you want. The information can be extracted directly from your database and displayed in a matter of seconds.

For an example that runs on an HP 9000 and extracts data from an Allbase environment, just point your browser to

<http://www.robelle.com/support/examples.html>.

Unfortunately, we have been unable to run similar CGI scripts on an HP 3000. It looks like a problem with the POSIX implementation on HP 3000. We will update our Web page as soon as we have something working.

STExport generates Web documents that are ready to publish. If you want to enhance these files further, you can use your favorite editor, Qedit, to insert images and links.

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Web server software

- Apache/iX
 - Popular freeware Web server ported onto MPE/iX by Mark Bixby
<http://www.cccd.edu/~markb/apacheix.html>
- QWEBS
 - Commercial Web server from Quintessential School Systems
<http://www.qss.com>

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You do not have to transfer your Web documents to another machine running Web server software. There are a few servers available for the HP 3000.

Apache/iX is a free Web server. It has been ported to MPE/iX by Mark Bixby from Coast Community College District.

QWEBS is a commercial Web server available from Quintessential School Systems.

NOTE: For a while, Hewlett-Packard promoted Open Market's Web Server software, which was also available on other platforms. However, Open Market has recently announced they were getting out of the Web server business altogether, not just the HP 3000. As a result, Open Market is no longer an option.

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Summary

- No need to learn HTML
- Create Web documents easily using tools you already know
- Fast extraction of static or dynamic data

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