

Version 8.2 Changes and Enhancements



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CEDA Availability

CEDA, which stands for Cross Environment Data Access is now available with Base SAS Software and does not require SAS/Connect Software. This allows direct access to SAS data files on any operating system.

Typical code that is running under Windows could access data files on the UNIX environment.

```
Program Editor - (Untitled)
Command ==>
00001 data _WORK_ / SERVER1/home/jsmith/myfile.sas7bdat;
00002 set _WORK_ / SERVER2/usr/somefile.sas7bdat;
00003 where x = 1;
00004 newvar = 0;
00005 run;
00006 proc print data=_WORK_ / SERVER1/home/jsmith/myfile.sas7bdat;
00007 run;
00008
```

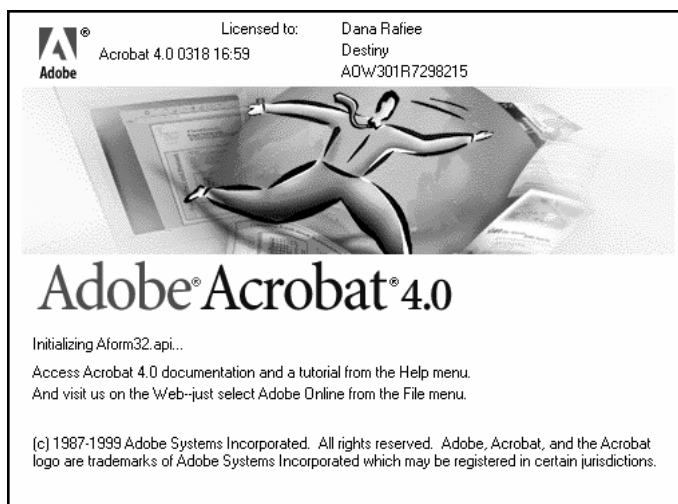
ODS Output Delivery System Changes

PDF Support

SAS now supports direct creation of PDF files without additional software. These files work well for web support when formatting shouldn't change on output. The code looks like the following.

```
Program Editor - pdf.sas
Command ==>
00001 ods listing close;
00002 ods pdf file='c:\my.pdf';
00003 proc print data=saved.demog;
00004 run;
00005 ods pdf close;
00006
```

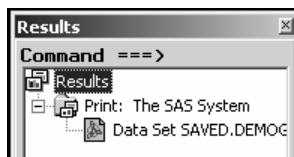
Adobe Acrobat loads to allow viewing of the PDF file from within SAS.



This is the PDF output created. Notice the bookmarks on the left which allow for easy access to multiple documents and pages.

Obs	NAME	AGE	GENDER	HEIGHT	WEIGHT	STATUS	CHILDREN	CARS	SALARY	GRADE
1	Dave Deery	22	M	64.0	60	S	0	1	13502	low
2	Julia Pendlebury	26	F	87.0	74	M	1	1	8870	low
3	Norman Harvey	29	M	55.0	62	D	2	1	12072	low
4	Harold Hicks	28	M	84.0	74	M	3	1	23760	high
5	Mary McIntosh	23	F	84.0	68	F	1	1	10112	low
6	Beth Hollington	30	M	87.0	76	S	0	1	7520	low
7	Frank Hamilton	34	F	78.0	72	M	2	1	28812	high
8	Julia Kahl	38	F	69.0	56	M	2	1	14840	low
9	Helen Cunderford	56	F	52.0	60	M	3	2	47520	high
10	Mary Chapel	52	F	66.0	69	M	5	1	23760	high
11	Joanlar Dawson	60	F	88.5	71	M	3	2	20502	high
12	Julia Jennings	55	F	61.0	61	M	0	2	13700	low
13	Shirley Walters	46	F	63.0	76	W	3	1	47520	high
14	Diane Dingley	65	F	87.0	81	M	2	1	18480	low
15	Diane Deery	23	F	78.0	80	S	0	1	12880	low
16	Steve Jones	28	M	67.0	82	1	2	9	11008	low
17	Brian Ellwood	25	M	65.0	76	D	2	1	53970	high
18	David Belling	34	M	73.0	64	M	3	2	11360	low
19	James Kunderly	36	M	61.0	65	M	2	1	30360	high
20	Terence Laffer	33	M	76.5	75	S	0	1	12155	low
21	Frederick Eldridge	40	M	66.0	81	M	2	1	19483	high
22	Alan Postlethwaite	34	M	73.0	82	M	4	3	12800	low
23	Charles Freebody	48	M	77.0	60	M	5	2	22672	high
24	Andrew Fortesque-Smyth	55	M	84.0	82	F	2	1	10008	low
25	Karl Tennison	44	M	84.0	79	D	3	1	15840	high
26	Victor Smith	54	M	59.0	70	S	0	1	38713	high
27	Jonny Franks	36	F	53.0	69	M	1	0	9870	low
28	Norris Worth	19	M	54.0	62	S	0	0	7672	low

Notice how the PDF file is listed in the Results window.



RTF Support

SAS now supports direct creation of RTF files. These files can be used in Microsoft Word or other word processors. The code looks like the following.

```

Program Editor - rtf.sas
Command ==>
00001 ods listing close;
00002 ods rtf file='c:\my.rtf';
00003 proc print data=saved.demog;
00004 run;
00005 ods rtf close;
00006

```

The output looks like the following.

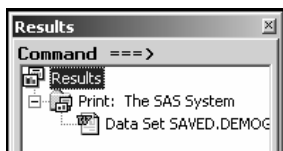
Results Viewer - my.rtf

Command ==>

The SAS System 07:32 Sunday, July 0

Obs	NAME	AGE	GENDER	HEIGHT	WEIGHT	STATUS	CHILDREN	CARS	SALARY	G
1	Dave Derry	22	M	64.0	60	S	0	1	13992	lo
2	Julia Pendlebury	26	F	87.0	74	M	1	1	8870	hi
3	Norman Harvey	29	M	55.0	62	D	2	1	12672	lo
4	Harold Hicks	28	M	84.0	74	M	3	1	23760	hi
5	Mary Molesworth	23	F	84.0	88	F	1	1	10512	lo
6	Bob Bobington	30	M	87.0	76	S	0	1	7520	hi
7	Freda Bamford	34	F	78.0	72	M	2	1	28512	hi
8	Julia Kidd	38	F	69.0	56	M	2	1	14840	lo
9	Helen Cinderford	56	F	52.0	60	M	3	2	47520	hi
10	Mary Chapel	52	F	66.0	69	M	5	1	23760	hi
11	Jennifer Dawson	60	F	88.5	71	M	3	2	20592	hi
12	Julio Jennings	56	F	61.0	61	M	0	2	13760	lo
13	Shirley Walters	46	F	63.0	76	W	3	1	47520	hi
14	Diane Dullely	65	F	87.0	81	M	2	1	13840	lo
15	Dawn Durest	23	F	78.0	80	S	0	1	12840	lo
16	Steve Jones	28	M	67.0	82		2	0	11008	lo
17	Brian Ellows	25	M	65.0	76	D	2	1	53970	hi

The Results window lists the output as a registered Word document.



New ODS Statements

Statement	Description
ODS ESCAPECHAR	This allows you to specify an escape character that could be used in cells or paragraphs. This can be any one character. It should not be a widely used character.
ODS PROCLABEL	This changes the default procedure name to a name of your choosing when being listed in the table of contents.
ODS RESULTS	This sends output created with ODS to the Results window. The values are ON or OFF.
ODS _ALL_ CLOSE	This statement closes all ODS windows and file destinations.

ODS ESCAPECHAR

```

Program Editor - escapechar.sas
Command ==>
00001 ods listing close;
00002 ods html body='c:\escapechar.html';
00003
00004 ods escapechar='\';
00005
00006 title "Example of changing the style to \S={font_style=roman}Roman\S={}.";
00007 proc print data=saved.demogius;
00008 run;
00009
00010 ods html close;
00011 ods listing;
00012

```

Notice the \S= which is used to represent a style change. The title statement normally produces italicized output. Now we change the word to a Roman font style.

Example of changing the style to Roman.

Obs	AGE	GENDER	HEIGHT	WEIGHT	STATUS	CHILDREN	CARS	SALARY	G
1	18	M	85.5	72	S	0	0	9008	lo
2	21	F	63.0	62	M	2	1	25410	hi

See the online help for more information on the ODS ESCAPECHAR statement.

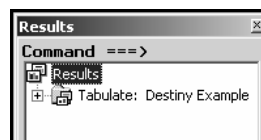
ODS PROCLABEL

```

Program Editor - proclabel.sas
Command ==>
00001 ods html body='c:\proclabel.html';
00002 ods listing close;
00003 ods proclabel 'Destiny Example';
00004
00005 proc tabulate data=saved.demogius;
00006 class status gender;
00007 var age;
00008 table status,gender*age*mean;
00009 run;
00010
00011 ods html close;
00012 ods listing;
00013

```

This program allows you to name the listing of your output in the Results Window.



New ODS Attributes

There are three new image options available. They are designed to be used in style options.

BACKGROUNDIMAGE

This option sets a background image in the output object. The image is typically a GIF file.

```

Program Editor - backgroundimage.sas
Command ==>
00001 ods html body='c:\backgroundimage.html';
00002 ods listing close;
00003
00004 title 'Backgroundimage Option';
00005
00006 proc tabulate data=saved.demogius;
00007 class status gender;
00008 var age;
00009 table status,gender*age*mean / box={label='Destiny Corporation USA' style={backgroundimage='c:\babycha3.gif'}};
00010 run;
00011
00012 ods html close;
00013 ods listing;
00014
00015

```

Backgroundimage Option

 Destiny Corporation USA	GENDER	
	F	M
	AGE	AGE
	Mean	Mean
STATUS		
D	26.00	40.75
M	41.90	43.68
P	44.00	26.00
S	23.67	28.13
W	47.00	

PREIMAGE

This option sets an image before text in the output object.

```

Program Editor - preimage.sas
Command ==>
00001 ods html body="c:\preimage.html";
00002 ods listing close;
00003
00004 title 'Preimage Option';
00005
00006 proc tabulate data=saved.demogius;
00007 class status gender;
00008 var age;
00009 table status,gender*age*mean / box={label='Destiny Corporation USA'
00010 style={preimage='c:\babycha3.gif'}};
00011 run;
00012
00013 ods html close;
00014 ods listing;
00015

```

Preimage Option

 Destiny Corporation USA	GENDER	
	F	M
	AGE	AGE
	Mean	Mean
STATUS		
D	26.00	40.75
M	41.90	43.68
P	44.00	26.00
S	23.67	28.13
W	47.00	

POSTIMAGE

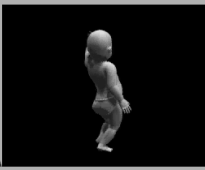
This option sets an image after text in the output object.

```

Program Editor - postimage.sas
Command ==>
00001 ods html body="c:\postimage.html";
00002 ods listing close;
00003
00004 title 'Postimage Option';
00005
00006 proc tabulate data=saved.demogius;
00007 class status gender;
00008 var age;
00009 table status,gender*age*mean / box={label='Destiny Corporation USA'
00010 style={postimage='c:\babycha3.gif'}};
00011 run;
00012
00013 ods html close;
00014 ods listing;
00015

```

Postimage Option

Destiny Corporation USA 	GENDER	
	F	M
	AGE	AGE
	Mean	Mean
STATUS		
D	26.00	40.75
M	41.90	43.68
P	44.00	26.00
S	23.67	28.13
W	47.00	

ID= Option

The ID= option is now available to be used on the ODS HTML statement for running more than one instance of the same ODS output destination concurrently.

ODS PATH Options

There are several new options to the ODS PATH statement.

- APPEND Adds additional paths to the end of the existing paths.
- PREPEND Adds additional paths to the beginning of the existing paths.
- REMOVE Removes path locations.

```

Program Editor - path.sas
Command ==>
00001 ods path reset;
00002 ods path show;
00003
00004 ods path sasuser.tmplmast;
00005 ods path (append) sasuser.templat;
00006 ods path show;
00007
00008 ods path (prepend) work.templat;
00009 ods path show;
00010

```

The log shows the results.

```

Log - (Untitled)
Command ==>
174 ods path reset;
175 ods path show;
Current ODS PATH list is:
1. SASUSER.TEMPLAT(UPDATE)
2. SASHELP.TMPLMST(READ)
176
177 ods path sasuser.tmplmast;
178 ods path (append) sasuser.templat;
179 ods path show;
Current ODS PATH list is:
1. SASHELP.TMPLMST(READ)
2. SASUSER.TEMPLAT(READ)
180
181 ods path (prepend) work.templat;
182 ods path show;
Current ODS PATH list is:
1. WORK.TEMPLAT(READ)
2. SASHELP.TMPLMST(READ)
3. SASUSER.TEMPLAT(READ)

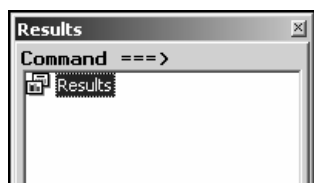
```

The path is reset to the SAS default. The show displays the current search path for templates in the log. Append and Prepend are demonstrated here.

ODS RESULTS

```
Program Editor - results.sas
Command ===>
00001 ods listing close;
00002
00003 ods results=off;
00004
00005 ods html body='c:\resultsoff.html';
00006 proc print data=saved.demogius;
00007 run;
00008
00009 ods html close;
00010
00011 ods results=on;
00012
00013 ods listing;
00014
```

Notice that after running the code, nothing is tracked in the Results window.



New ODS PRINTER Options

- DISPLAY= Turns Display destinations on and off.
- ID= Run more than one instance of the same destination concurrently.
- PCL= Specify a PCL destination.
- PDF= Specify a PDF destination.
- PS= Specify a Postscript destination.
- STARTPAGE= Specify page breaks on printer output.

New ODS RTF Options

- ID= Run more than one instance of the same destination concurrently.
- STARTPAGE= Specify page breaks on printer output.

New Proc Template Options

- Store= Supports READ, WRITE and UPDATE options
- Path Statement Options Supports APPEND, PREPEND and REMOVE.
- Path Statement Arguments RESET, SHOW and VERIFY are now supported.

File Compression

SAS now checks the resulting compressed file size. If it will be larger after compression, then SAS will not compress the file. An error message will be listed in the Log.

European Currency Conversion

SAS now supports most European monetary conversions. A complete table listing these new formats and informats is listed below.

Unicode Formats

Format	Function
\$UCS2Bw.	This format is designed to write a big endian 16-bit USC2 Unicode. See SAS documentation for details.
\$UCS2Lw.	This format is designed to write a little endian 16-bit USC2 Unicode. See SAS documentation for details.
\$UCS2Xw.	This format is designed to write a 16-bit USC2 Unicode. There will be no byte order mark.
\$UTF8Xw.	This format is designed to write character data in 8-bit Unicode (UCS2).

Date and Time Formats

Format	Function
DTMONYXw.	Is designed to format the month and year of a datetime value in the mmmmy or mmmmyy form.
DTWKDATXw.	Is designed to format the date portion of a datetime value as the day of the week. The date is displayed as day-of-week, dd mm yy. See SAS documentation for details.
DTYEARw.	Takes the datetime value and formats the year as yy or yyyy.
DTYYQCw.	Takes the datetime value and displays the quarter and the year, separated by a colon.

Binary Formats

Format	Function
S370FHEXw.d	Displays binary values in hexadecimal form.
VAXRBw.d	Displays binary values in VMS form.

European Currency in the EURO and EURFR Formats

Format	Function
EUROW.d	Comma separates every three digits; period separates decimal points.
EUROXw.d	Period separates every three digits; comma separates

	decimal points.
EURFRATSw.d	Converts Austrian schillings to euros.
EURFRBEFw.d	Converts Belgian francs schillings to euros.
EURFRCHFw.d	Converts Swiss francs to euros.
EURFRCZKw.d	Converts Czech koruny to euros.
EURFRDEMw.d	Converts German marks to euros.
EURFRDKKw.d	Converts Danish kroner to euros.
EURFRESPw.d	Converts Spanish pasetas to euros.
EURFRFIMw.d	Converts Finnish markkaa to euros.
EURFRFRFw.d	Converts French francs to euros.
EURFRGBPw.d	Converts British pounds to euros.
EURFRGRDw.d	Converts Greek drachmas to euros.
EURFRHUFw.d	Converts Hungarian forints to euros.
EURFRIEPw.d	Converts Irish pounds to euros.
EURFRITLw.d	Converts Italian lire to euros.
EURFRLUFw.d	Converts Luxembourg francs to euros.
EURFRNLGw.d	Converts Dutch guilders to euros.
EURFRNOKw.d	Converts Norwegian krone to euros.
EURFRPLZw.d	Converts Polish zlotys to euros.
EURFRPTEw.d	Converts Portuguese escudos to euros.
EURFRROLw.d	Converts Romanian lire to euros.
EURFRRURw.d	Converts Russian rubles to euros.
EURFRSEKw.d	Converts Swedish kronor to euros.
EURFRSITw.d	Converts Slovenian tolar.
EURFRTRLw.d	Converts Turkish liras to euros.
EURFRYUDw.d	Converts Yugoslavia dinars.

EURTOCZKw.d	Converts euros to Czech koruny.
EURTOFIMw.d	Converts euros to Finnish markkaa.
EURTODEMw.d	Converts euros to German marks.
EURTODKKw.d	Converts euros to Danish kroner to euros.
EURTOESPw.d	Converts euros to Spanish pasetas to euros.
EURTOFRFw.d	Converts euros to Finnish markkaa to euros.
EURTOGBPw.d	Converts euros to French francs to euros.
EURTOGRDw.d	Converts euros to British pounds to euros.
EURTOHUFw.d	Converts euros to Greek drachmas to euros.
EURTOIEPw.d	Converts euros to Hungarian forints to euros.
EURTOITLw.d	Converts euros to Irish pounds to euros.
EURTOLUFw.d	Converts euros to Italian lire to euros.
EURTONLGw.d	Converts euros to Luxembourg francs to euros.
EURTONOKw.d	Converts euros to Dutch guilders to euros.
EURTOPLZw.d	Converts euros to Norwegian krone to euros.
EURTOPTew.d	Converts euros to Polish zlotys to euros.
EURTOROLw.d	Converts euros to Portuguese escudos to euros.
EURTOROLw.d	Converts euros to Romanian lire to euros.
EURTORURw.d	Converts euros to Russian rubles to euros.
EURTOSEKw.d	Converts euros to Swedish kronor to euros.
EURTOSITw.d	Converts euros to Slovenian tolar.
EURTOTRLw.d	Converts euros to Turkish liras to euros.
EURTOYUDw.d	Converts euros to Yugoslavia dinars.

Unicode Informat

Informat	Function
\$UCS2Bw.	Reads in data in big endian 16-bit USC2 Unicode. See SAS documentation for details.
\$UCS2Lw.	Reads in data in little endian 16-bit USC2 Unicode. See SAS documentation for details.
\$UCS2Xw.	Reads in data in 16-bit USC2 Unicode. There will be no byte order

Format	Function
EURTOATSw.d	Converts euros to Austrian schillings.
EURTOBEFw.d	Converts euros to Belgian francs schillings.
EURTOCHFw.d	Converts euros to Swiss francs.

	mark.
\$UTF8Xw.	Reads character data in 8-bit Unicode (UCS2).

EURO Conversion Example

```

Program Editor - euroformat.sas
Command ==> |
00001 ods listing close;
00002 ods html body='c:\euro.html';
00003
00004 options validvarname=any;
00005 data work.one;
00006   drop value;
00007   value=999999999;
00008   'formatted value' nput(value,EURO14.2); format='EURO14.2'; output;
00009   'formatted value' nput(value,EUROX14.2); format='EUROX14.2'; output;
00010   'formatted value' nput(value,EURFRATS14.2); format='EURFRATS14.2'; output;
00011   'formatted value' nput(value,EURFRBEF14.2); format='EURFRBEF14.2'; output;
00012   'formatted value' nput(value,EURFRCHF14.2); format='EURFRCHF14.2'; output;
00013   'formatted value' nput(value,EURFRCK14.2); format='EURFRCK14.2'; output;
00014   'formatted value' nput(value,EURFRDEM14.2); format='EURFRDEM14.2'; output;
00015   'formatted value' nput(value,EURFRDKK14.2); format='EURFRDKK14.2'; output;
00016   'formatted value' nput(value,EURFRFIM14.2); format='EURFRFIM14.2'; output;
00017   'formatted value' nput(value,EURFRFRF14.2); format='EURFRFRF14.2'; output;
00018   'formatted value' nput(value,EURFRFRL14.2); format='EURFRFRL14.2'; output;
00019   'formatted value' nput(value,EURFRGRD14.2); format='EURFRGRD14.2'; output;
00020   'formatted value' nput(value,EURFRHUF14.2); format='EURFRHUF14.2'; output;
00021   'formatted value' nput(value,EURFRIEP14.2); format='EURFRIEP14.2'; output;
00022   'formatted value' nput(value,EURFRITL14.2); format='EURFRITL14.2'; output;
00023   'formatted value' nput(value,EURFRLUF14.2); format='EURFRLUF14.2'; output;
00024   'formatted value' nput(value,EURFRNLG14.2); format='EURFRNLG14.2'; output;
00025   'formatted value' nput(value,EURFRNOK14.2); format='EURFRNOK14.2'; output;
00026   'formatted value' nput(value,EURFRPLZ14.2); format='EURFRPLZ14.2'; output;
00027   'formatted value' nput(value,EURFRPTE14.2); format='EURFRPTE14.2'; output;
00028   'formatted value' nput(value,EURFRROL14.2); format='EURFRROL14.2'; output;
00029   'formatted value' nput(value,EURFRRUR14.2); format='EURFRRUR14.2'; output;
00030   'formatted value' nput(value,EURFRSEK14.2); format='EURFRSEK14.2'; output;
00031   'formatted value' nput(value,EURFRSIT14.2); format='EURFRSIT14.2'; output;
00032   'formatted value' nput(value,EURFRTRL14.2); format='EURFRTRL14.2'; output;
00033   'formatted value' nput(value,EURFRYUD14.2); format='EURFRYUD14.2'; output;
00034
00035 run;
00036 proc print data=work.one;
00037 run;
00038
00039 ods html close;
00040 ods listing;
00041

```

Obs	formatted value	format
1	E99,999,999.00	EURO14.2
2	E99,999,999.00	EUROX14.2
3	E7,267,283.34	EURFRATS14.2
4	E2,478,935.22	EURFRBEF14.2
5	E62,332,480.83	EURFRCHF14.2
6	E2,868,921.80	EURFRCK14.2
7	E51,129,187.61	EURFRDEM14.2
8	E13,350,974.29	EURFRDKK14.2
9	E601,012.10	EURFRFIM14.2
10	E16,818,792.48	EURFRFRF14.2
11	E15,244,901.57	EURFRFRL14.2
12	142,830,207.73	EURFRGBP14.2
13	E293,354.06	EURFRGRD14.2
14	E384,135.21	EURFRHUF14.2
15	126,973,806.57	EURFRIEP14.2
16	E51,645.69	EURFRITL14.2
17	E2,478,935.22	EURFRLUF14.2
18	E45,378,021.16	EURFRNLG14.2
19	E10,872,283.18	EURFRNOK14.2
20	E23,809,523.57	EURFRPLZ14.2
21	E498,797.89	EURFRPTE14.2
22	E7,293,945.95	EURFRROL14.2
23	E5,058,680.65	EURFRRUR14.2
24	E10,677,019.00	EURFRSEK14.2
25	E523,560.20	EURFRSIT14.2
26	E296,813.41	EURFRTRL14.2
27	E7,654,388.95	EURFRYUD14.2

Sending E-mail Using SMTP

It is possible to send email from within SAS. SMTP (Simple Mail Transfer Protocol) is used. The code would look similar to the following:

```

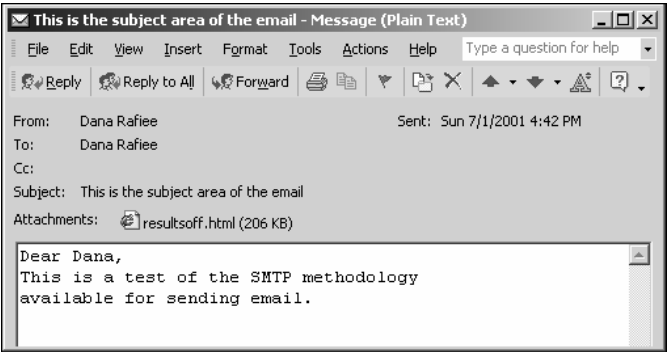
Program Editor - smtp.sas
Command ==> |
00001 filename fileref email "drafee@destinycorp.com"
00002   subject="This is the subject area of the email"
00003   attach="c:\resultsoff.html";
00004 data _null_;
00005   file fileref;
00006   put 'Dear Dana,';
00007   put 'This is a test of the SMTP methodology';
00008   put 'available for sending email.';
00009 run;
00010
Log - (Untitled)
Command ==> |
186 data _null_;
187   file fileref;
188   put 'Dear Dana,';
189   put 'This is a test of the SMTP methodology';
190   put 'available for sending email.';
191 run;

NOTE: The file FILEREF is:
      E-Mail Access Device

Message sent
To:      drafee@destinycorp.com
Cc:
Subject: This is the subject area of the email
Attachments: c:\resultsoff.html
NOTE: 3 records were written to the file FILEREF.
      The minimum record length was 10.
      The maximum record length was 38.
NOTE: DATA statement used:
      real time      23.81 seconds
      cpu time       0.32 seconds

```

In Outlook, we see the following received.



Display Manager Command Enhancements

COLOR SYNTAX Command

This command enables color coding in the Program Editor and Notepad windows.

Issue the command.

```

NOTEPAD <NOTEPAD.SOURCE>
Command ==> color syntax
data work.one;
  x = 1;
run;
proc print;
run;

```

To see color coded statements.

DMOPTLOAD/DMSOPTSAVE Commands

These commands are designed to either save the current system option settings to the SAS registry key or a SAS data set or to reload them. This is the way to set up your environment with multiple global settings and use them as needed.

Use the viewtable window to see what is stored in the SAS data set.

	OPTNAME	OPTVALUE
1	AUTOSIGNON	0
2	CONNECTREMOTE	
3	CONNECTSTATUS	1
4	CONNECTWAIT	1
5	NETENCRYPT	0
6	NETENCRYPTALGORITHM	
7	NETENCRYPTKEYLEN	0
8	NETMAC	1
9	SASCMD	
10	SASFRSCR	#LN00003
11	SASSCRIPT	{\sasext0\connect\saslink}
12	TBUFSIZE	0
13	TCPPORTFIRST	0
14	TCPPORTLAST	0
15	COMAMID	TCP
16	COMAUX1	
17	COMAUX2	
18	CHARCODE	0
19	FORMS	DEFAULT
20	AWSCONTROL	(SYSTEMMENU MINMAX TITLE)
21	AWSDEF	(0 0 100 100)
22	AWSMENU	1
23	AWSMENUMERGE	0
24	FONT	{Sasfont 8}
25	ICON	0
26	PRTABORTDLGS	BOTH
27	PRTSETFORMS	1
28	SASCONTROL	(SYSTEMMENU MINMAX)
29	SCROLLBARFLASH	0
30	WINDOWSMENU	0
31	XMIN	0
32	XSYNC	1
33	XWAIT	1

To load these options, issue a command similar to the following.

New Printer Commands

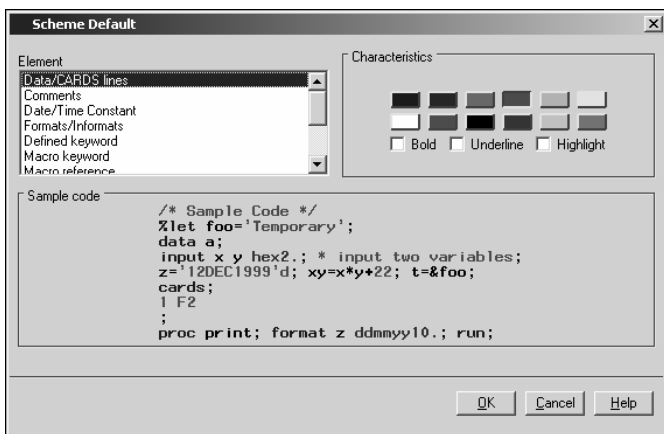
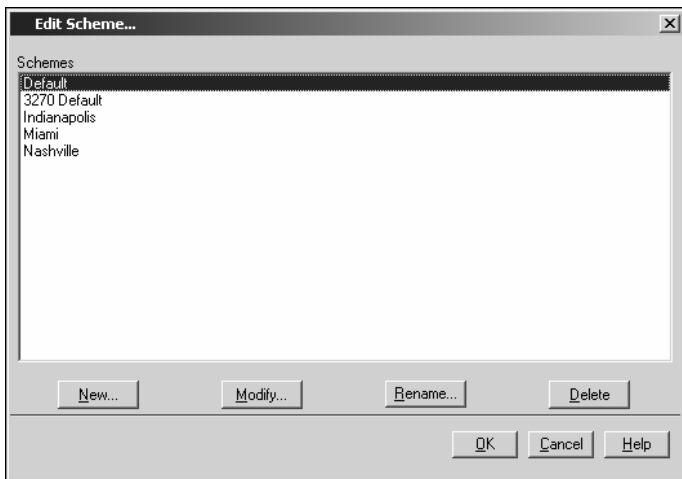
- DMPRTCREATE
- This command invokes a wizard to set up a new, universal printer definition.
- DMPRTSETUP
- This command invokes the Print Setup dialog box.

New Syntax Color Editor Commands

- SYNCOLOR
- This is a command that turns color coding on and off in the Notepad, SCL and Program Editor windows.
- SYNCONFIG
- This is a command that invokes the Edit Scheme window which is designed for changing the color scheme.

SYNCOLOR

SYNCONFIG

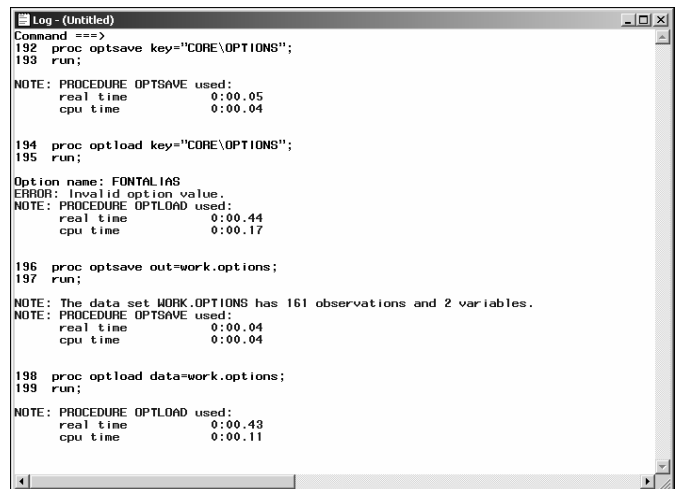
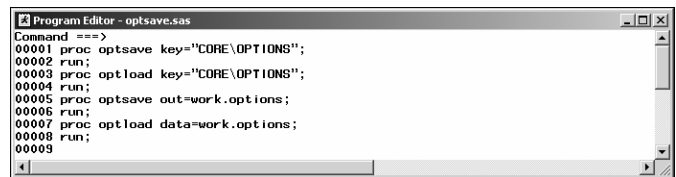


PROC FREQ Changes

- Exact point probabilities are now available with the POINT option on the EXACT statement.
- The LEVEL= suboption is now available when using the BINOMIAL option to compute the proportion of observations.
- BINOMIAL option statistics are available for one-way tables with the BINOMIALC option. This is used in the TABLES statement. This creates a continuity correction for asymptotic confidence limits and asymptotic tests.
- RISKDIFF options statistics on 2x2 tables are now available with the RISKDIFFC option. This is also used on the TABLES statement. This also creates a continuity correction for asymptotic confidence limits and asymptotic tests.

PROC OPTLOAD/OPTSAVE New

These procedures are designed to allow saving and loading of SAS global system option settings to the SAS registry or a SAS data set.



PROC PRINT Changes

The STYLE= option is now available on Proc Print. It can be used on the PROC PRINT statement, ID, SUM, and VAR statements.



The SAS System	
Obs	NAME
1	Dave Derry
2	Julia Pendlebury
3	Norman Harvey
4	Harold Hicks
5	Mary Molesworth
6	Bob Bobington
7	Freda Bamford
8	Julia Kidd
9	Helen Cinderford,
10	Mary Chapel
11	Jennifer Dawson
12	Julio Jennings
13	Shirley Walters

PROC PRINTTO Changes

Printing to a SAS catalog entry using a FILEREF is now supported with the LOG= and PRINT= options.

PROC PRTDEF New

This is a new procedure that is designed to allow batch creation of printer definitions. This is typically used by SAS administrators.

PROC REGISTRY Changes

Key names stored in the registry can be converted to upper case by using the UPCASE option.

PROC REPORT Changes

User Defined Styles Supported

PROC REPORT now supports user defined styles. This is much simpler than previous style usage in earlier versions of SAS and adheres to the standard use of styles as found in other procedures.

```
Program Editor - reportformat.sas
Command ==> |
00001 ods html body="c:\reportformat.html";
00002 ods listing close;
00003
00004 proc format;
00005 value agefmt
00006 1-18 = 'cx4DAEGE'
00007 19-30 = 'Blue'
00008 31-45 = 'Green'
00009 46-65 = 'Red'
00010 other = 'Gray';
00011 run;
00012 title 'Styles Now Available in Proc Report';
00013 footnote;
00014 proc report data=saved.demograf nowindows;
00015 column gender status age salary;
00016 define gender / group;
00017 define status / group;
00018 define age / mean style={foreground=agefmt.};
00019 define salary / sum ;
00020 run;
00021
00022 ods html close;
00023 ods listing;
00024
```

Styles Now Available in Proc Report

GENDER	STATUS	AGE	SALARY
F	D	29	8000
	M	42.923077	131600
	S	26.6	43000
	SEP	23	18000
	W	46	30000
M	D	34.5	20000
	M	36.666667	118300
	S	16.6	17800
	SEP	55	12000

New Quantile Statistics Supported

Additional statistics are now supported by PROC REPORT. These include:

- Median
- P1
- P5
- P10
- P25
- P75
- P90
- P95

- P99

Options in the Proc statement that specify how computations are made are:

- QMARKERS= The sample size used in the P2 quantile method of estimation.
- QMETHOD= The quantile estimation method to use.
- QNTLDEF= When calculating quantiles, which mathematical method should be used.

```
Program Editor - reportquantile.sas
Command ==> |
00001 ods html body="c:\reportquantile.html";
00002 ods listing close;
00003
00004 title 'New Quantile Statistics Now Available in Proc Report';
00005 footnote;
00006 proc report data=saved.demograf nowindows;
00007 column gender status age salary;
00008 define gender / group;
00009 define status / group;
00010 define age / median;
00011 define salary / sum ;
00012 run;
00013
00014 ods html close;
00015 ods listing;
00016
```

New Quantile Statistics Now Available in Proc Report

GENDER	STATUS	AGE	SALARY
F	D	29	8000
	M	38	131600
	S	22	43000
	SEP	23	18000
	W	46	30000
M	D	34.5	20000
	M	35	118300
	S	14	17800
	SEP	55	12000

COMPLETECOLS/NOCOMPLETECOLS Options

This is designed to be used with the ACROSS classification. When it is turned on, every possible combination of value is listed.

COMPLETEROWS/NOCOMPLETEROWS Options

This is designed to be used with the GROUP classification. When it is turned on, every possible combination of value is listed, even if it does not exist in all cases.

```
Program Editor - completerows.sas
Command ==>
00001 * Complete Rows Example;
00002
00003 ods html body="c:\reportc1.html";
00004 ods listing close;
00005
00006 title 'No Complete Rows Example';
00007 footnote;
00008 proc report data=saved.demograp nowindows nocompleterows;
00009 column gender status salary;
00010 define gender / group;
00011 define status / group;
00012 define salary / sum;
00013 run;
00014
00015 ods html close;
00016
00017 ods html body="c:\reportc2.html";
00018 title 'Complete Rows Example';
00019 footnote;
00020 proc report data=saved.demograp nowindows completerows;
00021 column gender status salary;
00022 define gender / group;
00023 define status / group;
00024 define salary / sum;
00025 run;
00026
00027 ods html close;
00028 ods listing;
00029
```

```
Program Editor - exclusive.sas
Command ==>
00001 * Without Exclusive Option;
00002
00003 ods html body="c:\reportne.html";
00004 ods listing close;
00005 proc format;
00006 value $status
00007 'S' = 'Single';
00008 'M' = 'Married';
00009 run;
00010
00011 title 'Report No Exclusive Option';
00012 footnote;
00013 proc report data=saved.demograp nowindows;
00014 column gender status salary;
00015 define gender / group;
00016 define status / group format=$status.;
00017 define salary / sum;
00018 run;
00019
00020 ods html close;
00021 ods listing;
00022
00023 * With Exclusive Option;
00024
00025 ods html body="c:\reporte.html";
00026 ods listing close;
00027
00028 title 'Report Exclusive and Preloadfmt Options';
00029 footnote;
00030 proc report data=saved.demograp nowindows;
00031 column gender status salary;
00032 define gender / group;
00033 define status / group format=$status. preloadfmt exclusive;
00034 define salary / sum;
00035 run;
00036
00037 ods html close;
00038 ods listing;
00039
```

No Complete Rows Example

GENDER	STATUS	SALARY
F	D	8000
	M	131600
	S	43000
	SEP	18000
	W	30000
M	D	20000
	M	118300
	S	17800
	SEP	12000

Report No Exclusive Option

GENDER	STATUS	SALARY
F	D	8000
	Married	131600
	SEP	18000
	Single	43000
	W	30000
M	D	20000
	Married	118300
	SEP	12000
	Single	17800

Complete Rows Example

GENDER	STATUS	SALARY
F	D	8000
	M	131600
	S	43000
	SEP	18000
	W	30000
M	D	20000
	M	118300
	S	17800
	SEP	12000
	W	.

Report Exclusive and Preloadfmt Options

GENDER	STATUS	SALARY
F	Married	131600
	Single	43000
M	Married	118300
	Single	17800

EXCLUSIVE and PRELOADFMT Options

The EXCLUSIVE option is used in the DEFINE statement along with the PRELOADFMT option to exclude items not found in the user defined format range.

MISSING Option

This option when used in the DEFINE statement lists missing values as their own separate grouping.

```
Program Editor - missing.sas
Command ==>
00001 * For this demonstration to work, at least one value must be missing in GENDER;
00002
00003 data work.demog;
00004 set saved.demog;
00005 if _n_ < 3 then gender = ' ';
00006 run;
00007
00008 ods html body="c:\reportmissing.html";
00009 ods listing close;
00010
00011 title 'Missing Option Demonstration';
00012 footnote;
00013 proc report data=work.demog nowindows;
00014 column gender salary;
00015 define gender / group missing;
00016 define salary / mean;
00017 run;
00018
00019 ods html close;
00020 ods listing;
00021
00022 ods html body="c:\reportnomissing.html";
00023 ods listing close;
00024
00025 title 'No Missing Option Demonstration';
00026 footnote;
00027 proc report data=work.demog nowindows;
00028 column gender salary;
00029 define gender / group;
00030 define salary / mean;
00031 run;
00032
00033 ods html close;
00034 ods listing;
00035
```

Missing Option Demonstration

GENDER	SALARY
	11231
F	19975.81
M	20660.731

No Missing Option Demonstration

GENDER	SALARY
F	19975.81
M	20660.731

WEIGHT Option

This is a new option available to allow specification of a data set variable that contains weighting values. It is used on the DEFINE statement.

PROC SQL Changes

BTRIM Function

This is designed to trim out a single character from the beginning or end of a character value.

```

Program Editor - sqlbtrim.sas
Command ==>
00001 ods listing close;
00002 ods html body='c:\sqlbtrim.html';
00003
00004 title;
00005 footnote;
00006 proc sql;
00007   select dept
00008   from saved.managers;
00009   select btrim('l' from dept) as DEPT
00010   from saved.managers;
00011 quit;
00012
00013 ods html close;
00014 ods listing;
00015

```

DEPT
101
201
301
401

DEPT
0
20
30
40

New Joins Available

PROC SQL offers three new ways to join tables.

CROSS
JOIN
NATURAL
JOIN

Cartesian Product of two
tables
Supports Inner, Left, Right
and Full Joins while
matching on the same

UNION
JOIN

column names found in
both tables.
Returns an appended union
of the two tables.

Let's take a look at two tables we will use for demonstration.

VIEWTABLE: saved.managers

	DEPT	MANAGER	TITLE
1	101	B WILLIE	MANAGER
2	201	S SMITH	VICE PRESIDENT
3	301	R OSWALD	ADMINISTRATOR
4	401	J JONES	PRESIDENT

VIEWTABLE: saved.employee

	DEPT	EMPLOYEE
1	301	AL FRANKLIN
2	301	CRAIG MASTERS
3	301	FAT TUESDAY
4	401	JIM DIXON
5	401	JOHN DOE
6	401	JOHN HOWES
7	201	JP JONES
8	301	LARRY SMITH
9	401	PAUL JONES
10	401	PAULIE SURE
11	201	RICHARD NIXON
12	401	SALLY MAY
13	301	STEVE SMITH
14	501	ELIZABETH DOLE

CROSS JOIN

```

Program Editor - sqlcross.sas
Command ==>
00001 ods listing close;
00002 ods html body='c:\sqlcross.html';
00003
00004 proc sql;
00005   select *
00006   from saved.managers cross join saved.employee;
00007 quit;
00008
00009 ods html close;
00010 ods listing;
00011

```

DEPT	MANAGER	TITLE	DEPT	EMPLOYEE
101	B WILLIE	MANAGER	301	AL FRANKLIN
101	B WILLIE	MANAGER	301	CRAIG MASTERS
101	B WILLIE	MANAGER	301	FAT TUESDAY
101	B WILLIE	MANAGER	401	JIM DIXON
101	B WILLIE	MANAGER	401	JOHN DOE
101	B WILLIE	MANAGER	401	JOHN HOWES
101	B WILLIE	MANAGER	201	JP JONES
101	B WILLIE	MANAGER	301	LARRY SMITH
101	B WILLIE	MANAGER	401	PAUL JONES
101	B WILLIE	MANAGER	401	PAULIE SURE
101	B WILLIE	MANAGER	201	RICHARD NIXON
101	B WILLIE	MANAGER	401	SALLY MAY
101	B WILLIE	MANAGER	301	STEVE SMITH
101	B WILLIE	MANAGER	501	ELIZABETH DOLE
201	S SMITH	VICE PRESIDENT	301	AL FRANKLIN
201	S SMITH	VICE PRESIDENT	301	CRAIG MASTERS

201	S SMITH	VICE PRESIDENT	301	FAT TUESDAY
201	S SMITH	VICE PRESIDENT	401	JIM DIXON
201	S SMITH	VICE PRESIDENT	401	JOHN DOE
201	S SMITH	VICE PRESIDENT	401	JOHN HOWES
201	S SMITH	VICE PRESIDENT	201	JP JONES
201	S SMITH	VICE PRESIDENT	301	LARRY SMITH
201	S SMITH	VICE PRESIDENT	401	PAUL JONES
201	S SMITH	VICE PRESIDENT	401	PAULIE SURE
201	S SMITH	VICE PRESIDENT	201	RICHARD NIXON
201	S SMITH	VICE PRESIDENT	401	SALLY MAY
201	S SMITH	VICE PRESIDENT	301	STEVE SMITH
201	S SMITH	VICE PRESIDENT	501	ELIZABETH DOLE
301	R OSWALD	ADMINISTRATOR	301	AL FRANKLIN
301	R OSWALD	ADMINISTRATOR	301	CRAIG MASTERS
301	R OSWALD	ADMINISTRATOR	301	FAT TUESDAY
301	R OSWALD	ADMINISTRATOR	401	JIM DIXON
301	R OSWALD	ADMINISTRATOR	401	JOHN DOE
301	R OSWALD	ADMINISTRATOR	401	JOHN HOWES
301	R OSWALD	ADMINISTRATOR	201	JP JONES
301	R OSWALD	ADMINISTRATOR	301	LARRY SMITH
301	R OSWALD	ADMINISTRATOR	401	PAUL JONES
301	R OSWALD	ADMINISTRATOR	401	PAULIE SURE
301	R OSWALD	ADMINISTRATOR	201	RICHARD NIXON
301	R OSWALD	ADMINISTRATOR	401	SALLY MAY
301	R OSWALD	ADMINISTRATOR	301	STEVE SMITH
301	R OSWALD	ADMINISTRATOR	501	ELIZABETH DOLE
401	J JONES	PRESIDENT	301	AL FRANKLIN
401	J JONES	PRESIDENT	301	CRAIG MASTERS
401	J JONES	PRESIDENT	301	FAT TUESDAY
401	J JONES	PRESIDENT	401	JIM DIXON
401	J JONES	PRESIDENT	401	JOHN DOE
401	J JONES	PRESIDENT	401	JOHN HOWES
401	J JONES	PRESIDENT	201	JP JONES
401	J JONES	PRESIDENT	301	LARRY SMITH
401	J JONES	PRESIDENT	401	PAUL JONES
401	J JONES	PRESIDENT	401	PAULIE SURE
401	J JONES	PRESIDENT	201	RICHARD NIXON
401	J JONES	PRESIDENT	401	SALLY MAY
401	J JONES	PRESIDENT	301	STEVE SMITH
401	J JONES	PRESIDENT	501	ELIZABETH DOLE

```

Program Editor - sqlouter.sas
Command ==>
00001 ods listing close;
00002 ods html body='c:\sqlouter.html';
00003
00004 proc sql;
00005     select *
00006     from saved.managers natural full join saved.employee;
00007 quit;
00008
00009 ods html close;
00010 ods listing;
00011

```

DEPT	EMPLOYEE	MANAGER	TITLE
101		B WILLIE	MANAGER
201	RICHARD NIXON	S SMITH	VICE PRESIDENT
201	JP JONES	S SMITH	VICE PRESIDENT
301	AL FRANKLIN	R OSWALD	ADMINISTRATOR
301	FAT TUESDAY	R OSWALD	ADMINISTRATOR
301	STEVE SMITH	R OSWALD	ADMINISTRATOR
301	CRAIG MASTERS	R OSWALD	ADMINISTRATOR
301	LARRY SMITH	R OSWALD	ADMINISTRATOR
401	JOHN HOWES	J JONES	PRESIDENT
401	SALLY MAY	J JONES	PRESIDENT
401	JOHN DOE	J JONES	PRESIDENT
401	PAULIE SURE	J JONES	PRESIDENT
401	JIM DIXON	J JONES	PRESIDENT
401	PAUL JONES	J JONES	PRESIDENT
501	ELIZABETH DOLE		

UNION JOIN

```

Program Editor - sqlunion.sas
Command ==>
00001 ods listing close;
00002 ods html body='c:\sqlunion.html';
00003
00004 proc sql;
00005     select *
00006     from saved.managers union join saved.employee;
00007 quit;
00008
00009 ods html close;
00010 ods listing;
00011

```

DEPT	MANAGER	TITLE	DEPT	EMPLOYEE
			301	AL FRANKLIN
			301	CRAIG MASTERS
			301	FAT TUESDAY
			401	JIM DIXON
			401	JOHN DOE
			401	JOHN HOWES
			201	JP JONES
			301	LARRY SMITH
			401	PAUL JONES
			401	PAULIE SURE
			201	RICHARD NIXON
			401	SALLY MAY
			301	STEVE SMITH
			501	ELIZABETH DOLE
101	B WILLIE	MANAGER		
201	S SMITH	VICE PRESIDENT		
301	R OSWALD	ADMINISTRATOR		
401	J JONES	PRESIDENT		

NATURAL JOIN

```

Program Editor - sqlinner.sas
Command ==>
00001 ods listing close;
00002 ods html body='c:\sqlinner.html';
00003
00004 proc sql;
00005     select *
00006     from saved.managers natural inner join saved.employee;
00007 quit;
00008
00009 ods html close;
00010 ods listing;
00011

```

DEPT	EMPLOYEE	MANAGER	TITLE
301	AL FRANKLIN	R OSWALD	ADMINISTRATOR
301	CRAIG MASTERS	R OSWALD	ADMINISTRATOR
301	FAT TUESDAY	R OSWALD	ADMINISTRATOR
401	JIM DIXON	J JONES	PRESIDENT
401	JOHN DOE	J JONES	PRESIDENT
401	JOHN HOWES	J JONES	PRESIDENT
201	JP JONES	S SMITH	VICE PRESIDENT
301	LARRY SMITH	R OSWALD	ADMINISTRATOR
401	PAUL JONES	J JONES	PRESIDENT
401	PAULIE SURE	J JONES	PRESIDENT
201	RICHARD NIXON	S SMITH	VICE PRESIDENT
401	SALLY MAY	J JONES	PRESIDENT
301	STEVE SMITH	R OSWALD	ADMINISTRATOR

Other SQL Changes

(See SAS documentation for further explanations of these items.)

- New FOLD functions are available for changing the case of argument values.
- When making string comparisons, the longer string is truncated to the length of the shorter string and then the values are compared.
- The SUBSTRING function can be used on a character expression.
- The ESCAPE clause is available on the LIKE CONDITION. It changes the behavior of the _ and %.

PROC UNIVARIATE Changes

HISTOGRAM Statement Changes

The HISTOGRAM statement has the following additional options.

CTEXTSIDE=	To specify row label coloring on the left of the histogram.
CTEXTTOP=	To specify row label coloring on the top of the histogram.
ENDPOINTS=	On the horizontal axis, endpoints are used for tick marks, instead of midpoints.
Additional Goodness of Fit tests based on the empirical distribution function.	See SAS Documentation for further information.

PROBPLOT Statement Changes

The PROBPLOT statement has the following additional options.

CTEXTSIDE=	To specify row label coloring on the left of the comparative probability plot.
CTEXTTOP=	To specify row label coloring on the top of the comparative probability plot.

QQPLOT Statement Changes

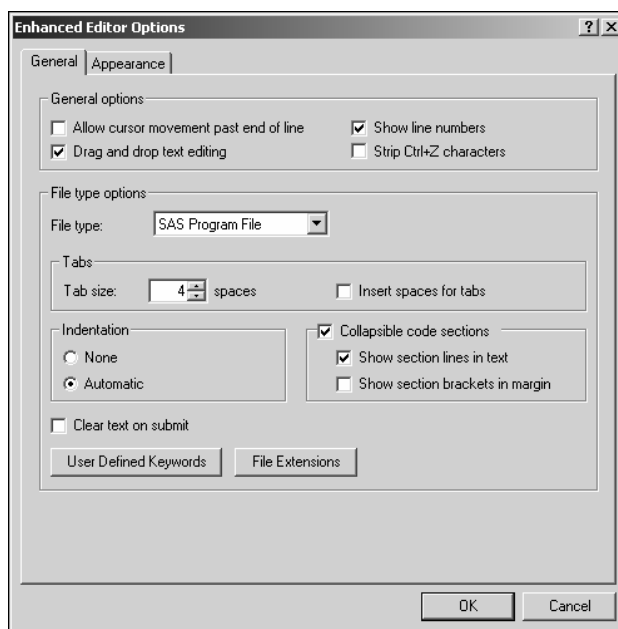
The QQPLOT statement has the following additional options.

CTEXTSIDE=	To specify row label coloring on the left of the comparative quantile-quantile plot.
CTEXTTOP=	To specify row label coloring on the top of the comparative quantile-quantile plot.

Enhanced Editor Changes

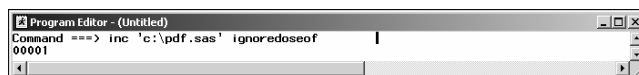
There are several changes regarding the Enhanced Editor available under the Windows environment.

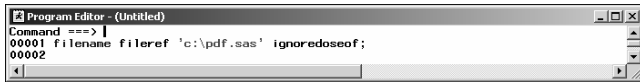
- The same program can be opened up by multiple Enhanced Editors.
- The SUBTOP command is now available; allow submission of the top n lines of code.
- The NUMS command turns line numbering on and off.
- The previous search string shows up in the next use of FIND and REPLACE dialog boxes.
- The Enhanced Editor keeps tabs on the modification of an external file. When it has changed and there have been no edits in the Editor, it will automatically reload the new version.
- The F11 key ships with a value of COMMAND FOCUS. This command is designed to take the cursor directly to the command bar, no matter which screen is active.
- The Enhanced Editor has an option to strip CTRL + Z characters created in a file by the DOS operating system. This is an extremely useful option, especially when these characters are placed in the file during a conversion to another operating system.



IGNOREDOSEOF Option

This is a new option available when using the INCLUDE and FILE commands when moving file information into our out of the editor. This option used as part of the command will ignore the ^Z end of file marker and convert it to a character.





Spooling the Log and Output

When running an asynchronous connection, the Log and Output can be spooled to files by using the LOG= and OUTPUT= options on the RSUBMIT statement.

(MP) Connect Changes

The KILLTASK statement can force asynchronous tasks and/or SAS sessions to immediate terminate.

SAS/CONNECT Monitoring

A SAS/CONNECT session can be monitored by using the SAS Explorer window. Asynchronous or synchronous sessions can be monitored.

SAS/CONNECT Agent Services

Full complements of agent services are now available with SAS/CONNECT software. These agents can be created, managed and scheduled on a remote host environment. External message service queues are supported.

Data Transfer Performance Improvements

SAS now uses a new file compression algorithm during PROC UPLOAD and PROC DOWNLOAD which significantly speeds up the movement of large data files.

Several changes have been made to SAS/STAT procedures. New procedures have been added to the package and are now production. This section will cover the highlights of those changes.

SAS/STAT Changes

PROC BOXPLOT Procedure

There are several enhancement options in the PLOT statement. These options are very useful when using HTML for linking and performing overlays on the same plot.

HTML=	In box and whisker plots, URLs designed for linking can be embedded with this option.
COVERLAY=	This option is designed to be used when plotting overlay variables. It specifies color.
CCOVERLAY=	When connecting line segments, this plot specifies color.
LOVERLAY=	This is used to specify line type.

NOOVERLAYLEGEND	This removes the legend.
OVERLAY=	This allows listing of variables to plot.
OVERLAYHTML=	URLs can be linked to points on the overlay.
OVERLAYLEGLAB=	Legend Labeling
OVERLAYSYM=	Specifies symbols to use when plotting points.
OVERLAYSYMHT=	Specifies height of symbols when plotting points.
WOVERLAY=	Specifies width of line segments.

PROC CATMOD Procedure

Wald confidence limits are now available when using the MODEL statement with the CLPARM option.

PROC FACTOR Procedure

SAS brought back the FLAG, FUZZ and ROUND options. They were removed in previous releases. They have no effect when confidence intervals or standard errors are used.

PROC FREQ Procedure

- Exact point probabilities are now available with the POINT option on the EXACT statement.
- The LEVEL= suboption is now available when using the BINOMIAL option to compute the proportion of observations.
- BINOMIAL option statistics are available for one-way tables with the BINOMIALC option. This is used in the TABLES statement. This creates a continuity correction for asymptotic confidence limits and asymptotic tests.
- RISKDIFF options statistics on 2x2 tables are now available with the RISKDIFFC option. This is also used on the TABLES statement. This also creates a continuity correction for asymptotic confidence limits and asymptotic tests.

PROC GAM Procedure - New

- A Local Regression Smoother is available to smooth univariate analysis. This is available in the MODEL statement.
- The DIST= option now supports binomial, gamma and Poisson distributions.
- Control is available for the convergence of the backfitting algorithm and the local score algorithm. See the MAXITER=, MAXITSCORE=, EPSILON=, and EPSSCORE= options.
- New keywords to specify upper and lower confidence limits, residuals, standard deviation or all items are now available in the OUTPUT

statement. These options are: UCLM, LCLM, RESID, STD, ADIAG, PRED, and ALL.

- More than one SCORE statement can now be used in one GAM procedure.

An example of the GAM procedure code and default results can be seen in the following.

```

Program Editor - gam.sas
Command ==> |
00001 ods listing close;
00002 ods html body='c:\gam.html';
00003
00004 proc gam data=saved.demogius;
00005     model weight = spline(age);
00006 run;
00007
00008 ods html close;
00009 ods listing;
00010

```

The SAS System

The GAM Procedure
Dependent Variable: WEIGHT
Smoothing Model Component(s): spline(AGE)

Summary of Input Data Set	
Number of Observations	104
Number of Missing Observations	0
Distribution	Gaussian
Link Function	Identity

Iteration Summary and Fit Statistics	
Final Number of Backfitting Iterations	2
Final Backfitting Criterion	4.585313E-32
The Deviance of the Final Estimate	4897.5223964

The local score algorithm converged.

Regression Model Analysis Parameter Estimates				
Parameter	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	69.23159	2.25830	30.66	<.0001
Linear(AGE)	0.02063	0.05633	0.37	0.7149

Smoothing Model Analysis Fit Summary for Smoothing Components				
Component	Smoothing Parameter	DF	GCV	Num Unique Obs
Spline(AGE)	0.998524	4.000000	42.769391	45

Smoothing Model Analysis Analysis of Deviance				
Source	DF	Sum of Squares	Chi-Square	Pr > ChiSq
Spline(AGE)	4.00000	229.802285	4.6453	0.3257

PROC LIFEREG Procedure

- The MODEL statement supports interaction terms when using any of the explanatory variables. Only one MODEL statement is supported in the procedure.
- The PROBLOT statement for probability plots is now supported. It can be used to show confidence intervals and nonparametric estimates of the CDF on the plot, along with fitted distributions.

- CLASS statement variables used in models show up on the SAS data set created with the OUTEST= option.
- Data sets created with the OUTPUT= option now contain standardized and Cox-Snell residuals.

PROC LOGISTIC Procedure

- When using nominal response data, it is now possible to fit a generalized logit model with the LINK=GLOGIT option on the MODEL statement. A response category can be chosen when using various logit functions.
- In the MODEL statement, options are available on the variable level when they are enclosed in parentheses. These options are:
 - o EVENT= The binary response model's event category.
 - o REFERENCE= The reference category.
 - o ORDER= The response category order.
 - o DESCENDING Reversing the response category order.
- NOSORT is an EXACTOPTIONS option that specifies not to sort the data. This is useful when you need to specify the order of the data. A preset order can help speed up calculations.

PROC LOESS Procedure

The three degrees of freedom and associated target values can be specified with the SELECT= option. This is available on the MODEL statement.

PROC MI Procedure - New

This procedure is designed to be used on incomplete p-dimensional multivariate data. It creates multiple imputed data sets. See the SAS documentation for further discussion of this procedure.

PROC MIANALYZE Procedure - New

This new procedure takes the analyses of m imputations and generates valid statistical inferences. See the SAS documentation for further discussion of this procedure.

PROC NPAR1WAY Procedure

The Kolmogorov-Smirnov two sample test is now supported with the KS option when used on the EXACT statement. Point probabilities for the exact test statistics are now available with the POINT option.

PROC PROBIT Procedure

- The MODEL statement supports interaction terms when using any of the explanatory variables. Only one MODEL statement is supported in the procedure.
- Graphical results are now available with model parameter estimation. These include:

- o predicted probabilities
- o inverse probabilities
- o cumulative probabilities
- o linear predictors

PROC REG Procedure

F-tests, p-values and cumulative R-Square values are available as variables are appended to the model. This is done with the SCORR1, SCORR2, TEST and SEQTEST options on the MODEL statement. See SAS documentation for details.

PROC SURVEYMEANS Procedure

Ratio analysis for means and proportions of analysis variables is available with the RATIO statement.

PROC TRANSREG Procedure

Box-Cox transformations of dependent variables is now available with the LAMBDA= option on the MODEL statement. Power parameters are specified on this option. See SAS documentation for details.