



Formats

Formats Under UNIX 193

Formats Under UNIX

This chapter describes SAS formats that have behavior or syntax that is specific to UNIX environments. Each format description includes a brief “UNIX specifics” section that tells which aspect of the data set option is specific to UNIX. Each format is described in both this documentation and in *SAS Language Reference: Dictionary*.

HEX w . format

Converts real binary (floating-point) numbers to hexadecimal representation

Numeric

Width range: 1 to 16

Default width: 8

Alignment: left

UNIX specifics: floating-point representation

Details

The HEX w . format converts a real (floating-point) binary number to its hexadecimal representation. When you specify a width value of 1 through 15, the real binary number is truncated to a fixed-point integer before being converted to hex. When you specify 16 for the width, the SAS System writes the floating-point value of the number but does not truncate it.

Note: UNIX systems vary widely in their floating-point representation. See “Reading and Writing Binary Data” on page 159 for more information. Δ

\$HEX w . format

Converts character values to hexadecimal representation

Character

Width range: 1 to 32767

Default width: 4

Alignment: left

UNIX specifics: produces ASCII codes

Details

Under UNIX, the SHEX*w*. format produces hexadecimal representations of ASCII codes for characters, with each byte requiring two columns. Therefore, you need twice as many columns to output a value with the SHEX*w*. format.

IBw.d format**Writes integer binary values**

Numeric

Width range: 1 to 8

Default width: 4

Decimal Range: 0–10

Alignment: left

UNIX specifics: byte order

Details

The IB*w.d* format writes integer binary (fixed-point) values. Integers are stored in integer-binary, or fixed-point, form. For example, the number 2 is stored as 00000002. If the format includes a *d* value, the data value is multiplied by 10^d .

For more details, see “Reading and Writing Binary Data” on page 159 .

PDw.d format**Writes packed decimal data**

Numeric

Width range: 1 to 16

Default width: 1

Decimal Range: 0–31

Alignment: left

UNIX specifics: data representation

Details

The PD*w.d* format writes values in packed decimal format. In packed decimal data, each byte contains two digits. The *w* value represents the number of bytes, not the

number of digits. The value's sign is the first byte. Because the entire first byte is used for the sign, you should specify at least a width of 2.

For more details, see “Reading and Writing Binary Data” on page 159 .

PIBw.d format

Writes positive integer binary values

Numeric

Width range: 1 to 8

Default width: 1

Decimal Range: 0–10

Alignment: left

UNIX specifics: byte order

Details

The PIBw.d format writes fixed-point binary values, treating all values as positive. Thus, the high-order bit is part of the value, rather than the value's sign. If a *d* value is specified, the data value is multiplied by 10^d .

For more details, see “Reading and Writing Binary Data” on page 159 .

RBw.d format

Writes real binary (floating-point) data

Numeric

Width range: 2 to 8

Default width: 4

Decimal Range: 0–10

Alignment: left

UNIX specifics: floating-point representation

Details

The RBw.d format writes numeric data in real binary (floating-point) notation. The SAS System stores all numeric values in floating-point.

Real binary is the most efficient format for representing numeric values because the SAS System already represents numbers this way and no conversion is needed.

For more details, see “RBw.d informat” on page 209 and “Reading and Writing Binary Data” on page 159 .

ZDw.d format

Writes zoned decimal data

Numeric

Width range: 1 to 32

Default width: 1

Alignment: left

UNIX specifics: data representation

Details

The ZDw.d format writes zoned decimal data. This format is also known as overprint trailing numeric format. Under UNIX, the last byte of the field includes the sign along with the last digit. The conversion table for the last byte is as follows:

Digit	ASCII Character	Digit	ASCII Character
0	{	-0	}
1	A	-1	J
2	B	-2	K
3	C	-3	L
4	D	-4	M
5	E	-5	N
6	F	-6	O
7	G	-7	P
8	H	-8	Q
9	I	-9	R

For more details, see “ZDw.d informat” on page 211 and “Reading and Writing Binary Data” on page 159 .

The correct bibliographic citation for this manual is as follows: SAS Institute Inc., *SAS® Companion for UNIX Environments, Version 8*, Cary, NC: SAS Institute Inc., 1999.

SAS® Companion for UNIX Environments, Version 8

Copyright © 1999 by SAS Institute Inc., Cary, NC, USA.

ISBN 1-58025-502-7

All rights reserved. Printed in the United States of America. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise, without the prior written permission of the publisher, SAS Institute Inc.

U.S. Government Restricted Rights Notice. Use, duplication, or disclosure of the software by the government is subject to restrictions as set forth in FAR 52.227-19 Commercial Computer Software-Restricted Rights (June 1987).

SAS Institute Inc., SAS Campus Drive, Cary, North Carolina 27513.

1st printing, October 1999

SAS® and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries.® indicates USA registration.

Other brand and product names are registered trademarks or trademarks of their respective companies.

The Institute is a private company devoted to the support and further development of its software and related services.