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| DECUS NO. | 8-570 |
| TITLE | BIN4SV |
| AUTHOR | Roger Kuykendall |
| COMPANY | Electric Scientific Industries Portland, Oregon |
| DATE | August 10, 1972 |
| SOURCE LANGUAGE | PAL-8 |

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/BN4SV
/AUGUST 10, 1972
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/THIS PROGRAM TRANSLATES SAVED FILES TO
/BINARY FORMAT FOR PS/8 OS/8 SYSTEMS.

/ON ENTRY, THE COMMAND DECODER IS CALLED
/SO THE RESPONSE TO THE ASTERISK (*) IS
/IN THE STANDARD COMMAND DECODER FORMAT.
/ONE OUTPUT FILE IS ALLOWED (OR ONE NON-FILE-
/FORMAT DEVICE) AND UP TO NINE INPUT FILES
/ARE ALLOWED. THE INPUT FILES ARE OUTPUT
/IN THE ORDER GIVEN IN THE COMMAND STRING,
/THUS WHEN THEY ARE LOADED, THE LATER ONES
/WILL OVERLAY THE EARLIER IF THERE IS ANY
/OVERLAP. USE CARE IN SELECTING OVERLAPPING
/FILES; REMEMBER THAT ALL SAVED FILES START
/AT ADDRESSES DIVISIBLE BY 400 (OCTAL), AS
/DO ALL NONCONTIGUOUS SEGMENTS OF THESE
/FILES.

/ERROR MESSAGES:
/THERE ARE THREE TYPES OF ERROR MESSAGES:
/COMMAND DECODER MESSAGES, MONITOR ERRORS,
/AND USER ERRORS.
/COMMAND DECODER ERRORS ARE SELF-EXPLANATORY
/AND SHOULD BE FAMILIAR TO ANYONE WITH
/EXPERIENCE IN OS/8-PS/8 PIP OR OTHER
/STANDARD PROGRAMS.
/MONITOR ERRORS ALMOST ALWAYS INDICATE
/HARDWARE FAILURES.
/USER ERROR MESSAGES HAVE THE FOLLOWING
/FORMAT:

/ USER ERROR (CHARACTER) AT 00707
/THE CHARACTER INDICATES THE TYPE OF
/FAILURE AS FOLLOWS:

/USER ERROR D INPUT DEVICE ERROR
/(ALSO = OR SPACE)

/USER ERROR J BAD CORE IMAGE
/(ALSO O OR BACK-
/ARROW)

/USER ERROR X OUTPUT DEVICE ERROR
/(ALSO I, T,
/OR >)

/USER ERROR A OUTPUT DEVICE FULL

/DEFINITIONS:

| | |
|-------|-----------------------------------|
| 0200 | USR=200 |
| 0020 | COUNT=20 |
| 0021 | OUTCNT=21 |
| 0022 | CKSM=22 |
| 0023 | ADDRES=23 |
| 0024 | BINFLD=24 |
| 0025 | INCONT=25 |
| 0026 | CHAR=26 |
| 0027 | CHR1=27 |
| 0030 | CHR2=30 |
| 0031 | CHR3=31 |
| 0032 | LDCT=32 |
| 0033 | CHC=33 |
| 0034 | CHARK=34 |
| 0100 | NAMES=100 |
| 0117 | INFILES=NAMES+17 |
| 5000 | OUTBUF=5000 |
| 6000 | CT_BUF=6000 |
| 0035 | *CHARK+1 |
| 4035 | BSW=JMS |
| 00035 | 0000 BSWZ, 0 |
| 00036 | 7112 CLL RTR |
| 00037 | 7012 RTR |
| 00040 | 7012 RTR |
| 00041 | 5435 JMP I BSWZ |
| 0200 | PAGE |
| 00200 | 7346 START, CLA CLL CMA RTL |
| 00201 | 3033 DCA CHC |
| 00202 | 3027 DCA CHR1 |
| 00203 | 3030 DCA CHR2 |
| 00204 | 6212 CIF 10 |
| 00205 | 4777 JMS I (7700 /GET USER |
| 00206 | 0010 10 /USERIN |
| 00207 | 6212 CIF 10 |
| 00210 | 4776 JMS I (USR |
| 00211 | 0005 5 /DECODE |
| 00212 | 2326 /ASSUMED EXTENSION .SV |
| 00213 | 7000 /CLOSE TENTATIVE FILES |
| 00214 | 1375 TAD (7577 /START OF CD LIST |
| 00215 | 3010 DCA 10 |
| 00216 | 1374 TAD (NAMES-1 |
| 00217 | 3011 DCA 11 |
| 00220 | 1373 TAD (7600-7617-22 |
| 00221 | 3020 DCA COUNT /NUMBER OF ENTRIES |
| 00222 | 6211 NAMLP, CIF 10 |
| 00223 | 1410 TAD I 10 |
| 00224 | 6201 CDF 0 |
| 00225 | 3411 DCA I 11 |
| 00226 | 2020 ISZ COUNT /FINISHED? |

| | | | | |
|-------|------|---|-----------------|--------------------------------|
| 00227 | 5222 | | JMP NAMLP | |
| 00230 | 1104 | | TAD NAMES+4 | /NO-- LOOP AGAIN |
| 00231 | 7640 | | SZA CLA | |
| 00232 | 5772 | | JMP EXOK | |
| 00233 | 1371 | | TAD (0216 | |
| 00234 | 3104 | | DCA NAMES+4 | |
| 00235 | 5772 | | JMP EXOK | |
| 00236 | 0000 | CHECK, | 0 | |
| 00237 | 3034 | | DCA CHARK | /SUBROUTINE TO ADD TO CHECKSUM |
| 00240 | 1022 | | TAD CKSM | /SAVE INPUT |
| 00241 | 1034 | | TAD CHARK | |
| 00242 | 3022 | | DCA CKSM | /ADD TO CHECKSUM |
| 00243 | 1034 | | TAD CHARK | |
| 00244 | 5636 | | JMP I CHECK | /GET INPUT AGAIN |
| 00245 | 0000 | /ROUTINE TO LOAD 2 FOR 3 IN BINARY FORMAT | | |
| 00246 | 3031 | LOAD, | 0 | |
| 00247 | 2033 | | DCA CHR3 | /SAVE INPUT CHARACTER |
| 00250 | 5275 | | ISZ CHC | /DO WE HAVE A FIRST CHARACTER? |
| 00251 | 1031 | | JMP CHSF | /NO--SHIFT CHARACTERS DOWN |
| 00252 | 7106 | | TAD CHR3 | /YES--SPLIT 3RD CHARACTER |
| 00253 | 7106 | | RTL CLL | |
| 00254 | 3031 | | RTL CLL | |
| 00255 | 1031 | | DCA CHR3 | |
| 00256 | 0370 | | TAD CHR3 | |
| 00257 | 1027 | | AND (7400 | /MASK FIRST 4 BITS |
| 00260 | 4301 | | TAD CHR1 | /COMBINE WITH FIRST CHARACTER |
| 00261 | 3027 | | JMS PUT | |
| 00262 | 1031 | | DCA CHR1 | |
| 00263 | 7106 | | TAD CHR3 | |
| 00264 | 7106 | | RTL CLL | |
| 00265 | 0370 | | RTL CLL | |
| 00266 | 1030 | | AND (7400 | /MASK 2ND 4 BITS |
| 00267 | 4301 | | TAD CHR2 | /COMBINE WITH 2ND CHARACTER |
| 00270 | 7346 | | JMS PUT | |
| 00271 | 3033 | | CLA CLL CMA RTL | |
| 00272 | 3030 | CHS1, | DCA CHC | /RESET CHARACTER COUNTER |
| 00273 | 3031 | | DCA CHR2 | /CLEAR 2ND CHARACTER |
| 00274 | 5645 | | DCA CHR3 | /CLEAR 3RD CHARACTER |
| 00275 | 1030 | CHSF, | JMP I LOAD | /RETURN |
| 00276 | 3027 | | TAD CHR2 | /SHIFT 2ND CHARACTER |
| 00277 | 1031 | | DCA CHR1 | /TO FIRST |
| 00300 | 5272 | | TAD CHR3 | /SHIFT 3RD |
| | | | JMP CHS1 | /TO 2ND |
| 00301 | 0000 | PUT, | 0 | |
| 00302 | 3414 | | DCA I 14 | /LOAD OUTPUT BUFFER |
| 00303 | 2021 | | ISZ OUTCNT | |
| 00304 | 5701 | | JMP I PUT | |
| 00305 | 4767 | | JMS DUMP | /BUFFER FULL., DUMP IT |
| 00306 | 5701 | | JMP I PUT | |
| 00307 | 0000 | LEADER, | 0 | |
| 00310 | 1366 | | TAD (-40 | /OUTPUT SOME LEADER |

00311 3032
00312 1376
00313 4245
00314 2032
00315 5312
00316 5707

DCA LDCT
TAD (200
JMS LOAD
ISZ LDCT
JMP .-3
JMP I LEADER

00317 1027
00320 4301
00321 3027
00322 1030
00323 4301

TAD CHR1
JMS PUT
DCA CHR1
TAD CHR2
JMS PUT

/1ST CHARACTER TO OUTPUT BUFFER
/CLEAR

/SECOND CHARACTER TO OUTPUT BUFFER

| | | | | |
|-------|------|--------|----------------|--------------------------------------|
| 00366 | 7740 | | | |
| 00367 | 0640 | | | |
| 00370 | 7400 | | | |
| 00371 | 0216 | | | |
| 00372 | 0600 | | | |
| 00373 | 7737 | | | |
| 00374 | 0077 | | | |
| 00375 | 7577 | | | |
| 00376 | 0200 | | | |
| 00377 | 7700 | | | |
| | 0400 | | | |
| 00400 | 2020 | READ, | PAGE ISZ COUNT | /READ A FILE |
| 00401 | 7410 | | SKP | /LAST FILE READ? |
| 00402 | 5777 | | JMP CLOSE | /YES--CLOSE OUTPUT FILE |
| 00403 | 1376 | | TAD (4401 | /NO--GET ANOTHER FILE |
| 00404 | 3213 | | DCA INHND | /INPUT HANDLER FUNCTION |
| 00405 | 1413 | | TAD I 13 | |
| 00406 | 7450 | | SNA | /LAST FILE READ? |
| 00407 | 5777 | | JMP CLOSE | /YES--CLOSE OUTPUT |
| 00410 | 6212 | | CIF 10 | /USR FIELD |
| 00411 | 4775 | | JMS I (7700 | /HIGH USER |
| 00412 | 0001 | | 1 | /FETCH HANDLER |
| 00413 | 0000 | INHND, | 0 | /HANDLER ADDRESS |
| 00414 | 4774 | | JMS ERROR | |
| 00415 | 1413 | | TAD I 13 | |
| 00416 | 3222 | | DCA INBLK | |
| 00417 | 4613 | | JMS I INHND | /HANDLER |
| 00420 | 0200 | | 200 | |
| 00421 | 6000 | | CTLBUF | |
| 00422 | 0000 | INBLK, | 0 | /DEVICE BLOCK NUMBER |
| 00423 | 4774 | | JMS ERROR | |
| 00424 | 1373 | | TAD (CTLBUF-1 | |
| 00425 | 3015 | | DCA 15 | |
| 00426 | 1415 | | TAD I 15 | |
| 00427 | 1372 | | TAD (100 | |
| 00430 | 7710 | | SPA CLA | |
| 00431 | 4774 | | JMS ERROR | /BAD CORE IMAGE |
| 00432 | 1415 | | TAD I 15 | |
| 00433 | 0371 | | AND (7707 | |
| 00434 | 1370 | | TAD (=6203 | |
| 00435 | 7640 | | SZA CLA | |
| 00436 | 4774 | | JMS ERROR | /BAD CORE IMAGE |
| 00437 | 7201 | | CLA IAC | |
| 00440 | 1222 | | TAD INBLK | |
| 00441 | 3315 | | DCA RDBLK | |
| 00442 | 1367 | | TAD (CTLBUF+3 | |
| 00443 | 3015 | | DCA 15 | |
| 00444 | 1766 | INPUT, | TAD CTLBUF | |
| 00445 | 7650 | | SNA CLA | /HAVE WE READ THE LAST OF THIS FILE? |
| 00446 | 5200 | | JMP READ | /YES--READ ANOTHER |
| 00447 | 1415 | | TAD I 15 | /NO--GET START ADDRESS |
| 00450 | 3023 | | DCA ADDRES | |
| 00451 | 1023 | | TAD ADDRES | |
| 00452 | 0365 | | AND (7400 | |

| | | | | |
|-------|-------|---------|-------------|------------------------------|
| 00453 | 7041 | | CIA | |
| 00454 | 1023 | | TAD ADDRES | |
| 00455 | 7640 | | SZA CLA | |
| 00456 | 4774* | | JMS ERROR | /BAD CORE IMAGE |
| 00457 | 1415 | | TAD I 15 | /GET FUNCTION WORD |
| 00460 | 3024 | | DCA BINFLD | |
| 00461 | 1024 | | TAD BINFLD | |
| 00462 | 0364 | | AND (3700 | |
| 00463 | 1363 | | TAD (10 | |
| 00464 | 3313 | | DCA RDFN | /FORCE INTO FIELD 1 |
| 00465 | 1024 | | TAD BINFLD | |
| 00466 | 0364 | | AND (3700 | |
| 00467 | 7104 | | RAL CLL | /NUMBER OF WORDS |
| 00470 | 7041 | | CIA | |
| 00471 | 3025 | | DCA INCONT | /INPUT COUNTER |
| 00472 | 1024 | | TAD BINFLD | |
| 00473 | 0362 | | AND (70 | /GET FIELD |
| 00474 | 3024 | | DCA BINFLD | |
| 00475 | 1023 | | TAD ADDRES | |
| 00476 | 4035 | | BSW | |
| 00477 | 0361 | | AND (77 | |
| 00500 | 1372 | | TAD (100 | |
| 00501 | 4760* | | JMS CHECK | |
| 00502 | 4757* | | JMS LOAD | |
| 00503 | 1023 | | TAD ADDRES | |
| 00504 | 0361 | | AND (77 | |
| 00505 | 4760* | | JMS CHECK | |
| 00506 | 4757* | | JMS LOAD | |
| 00507 | 1024 | | TAD BINFLD | |
| 00510 | 1356 | | TAD (300 | |
| 00511 | 4757* | | JMS LOAD | |
| 00512 | 4613 | GETBLK, | JMS I INHND | /INPUT HANDLER |
| 00513 | 0000 | RDFN, | 0 | /DYNAMIC |
| 00514 | 0000 | | 0 | /CORE ADDRESS =0, FIELD 1 |
| 00515 | 0000 | RDBLK, | 0 | /DYNAMIC |
| 00516 | 4774* | | JMS ERROR | |
| 00517 | 7340 | | CLA CLL CMA | |
| 00520 | 3016 | | DCA 16 | /AUTO INDEX TO -1 |
| 00521 | 6211 | TRANS, | CDF 10 | /TRANSLATE TO BIN FORMAT |
| 00522 | 1416 | | TAD I 16 | |
| 00523 | 6201 | | CDF 0 | |
| 00524 | 4341 | | JMS CODE | /ACTUAL TRANSLATION ROUTINE |
| 00525 | 2025 | | ISZ INCONT | /DONE WITH CORE SEGMENT? |
| 00526 | 5321 | | JMP TRANS | /NO-- LOOP AGAIN |
| 00527 | 1313 | | TAD RDFN | /YES-- COMPUTE NEW BLOCK NO. |
| 00530 | 1372 | | TAD (100 | /ROUND UP |
| 00531 | 7110 | | RAR CLL | |
| 00532 | 4035 | | BSW | |
| 00533 | 0355 | | AND (37 | |
| 00534 | 1315 | | TAD RDBLK | |
| 00535 | 3315 | | DCA RDBLK | |
| 00536 | 2766* | | ISZ CTLBUF | /LAST CORE SEGMENT? |
| 00537 | 5244 | | JMP INPUT | /NO-- GET ANOTHER |

| | | | | |
|-------|-------|-------|------------|------------------------|
| 00540 | 5200 | | JMP READ | /YES--GET ANOTHER FILE |
| 00541 | 0000 | CODE, | 0 | |
| 00542 | 3026 | | DCA CHAR | |
| 00543 | 1026 | | TAD CHAR | |
| 00544 | 4035 | | BSW | |
| 00545 | 0361 | | AND (77 | |
| 00546 | 4760' | | JMS CHECK | |
| 00547 | 4757' | | JMS LOAD | |
| 00550 | 1026 | | TAD CHAR | |
| 00551 | 0361 | | AND (77 | |
| 00552 | 4760' | | JMS CHECK | |
| 00553 | 4757' | | JMS LOAD | |
| 00554 | 5741 | | JMP I CODE | |

00555 0037
 00556 0300
 00557 0245
 00560 0236
 00561 0077
 00562 0070
 00563 0010
 00564 3700
 00565 7400
 00566 6000
 00567 6003
 00570 1575
 00571 7707
 00572 0100
 00573 5777
 00574 0711
 00575 7700
 00576 4401
 00577 0661
 0600

PAGE
 /OUTPUT ROUTINES

00600 1377 EXOK, TAD (INFILES-1
 00601 3013 DCA 13
 00602 1376 TAD (-12
 00603 3020 DCA COUNT /ALLOW 9 INPUT FILES
 00604 1375 TAD (4001
 00605 3214 DCA OUTHND
 00606 1100 TAD NAMES /GET OUTPUT DEVICE NO.
 00607 7450 SNA /IS THERE A NAME?
 00610 5774 JMP START /NO--START OVER
 00611 6212 CIF 10
 00612 4774 JMS I (USR /USR SHOULD STILL BE IN CORE
 00613 0001 1 /FETCH OUTPUT HANDLER
 00614 0000 OUTHND, 0 /OUTPUT HANDLER ADDRESS
 00615 4311 JMS ERROR
 00616 1301 TAD CLONAM
 00617 3226 DCA ENTNAM /POINTER TO NAME
 00620 3227 DCA ENTNAM+1 /CLEAR ARG2
 00621 3302 DCA CLOCNT /CLEAR CLOSE COUNTER
 00622 1100 TAD NAMES
 00623 6212 CIF 10
 00624 4774 JMS I (USR
 00625 0003 3 /ENTER OUTPUT FILE
 00626 0101 ENTNAM, NAMES+1 /DYNAMIC
 00627 0000 0
 00630 4311 JMS ERROR
 00631 1373 TAD (OUTBUF-1
 00632 3014 DCA 14
 00633 1372 TAD (-400
 00634 3021 DCA OUTCNT
 00635 3022 DCA CKSM /CLEAR CHECKSUM
 00636 4771 JMS LEADER
 00637 5770 JMP READ

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00640 0000 DUMP, 0 /DUMP ONE BLOCK OF OUTPUT FILE
00641 1226 TAD ENTNAM
00642 3246 DCA DBLOK
00643 4614 JMS I OUTHND
00644 4200 4200 /WRITE ONE BLOCK ON DEVICE
00645 5000 OUTBUF /FROM OUTPUT BUFFER
00646 0000 DBLOK, 0
00647 4311 JMS ERROR
00650 2226 ISZ ENTNAM
00651 2302 ISZ CLOCNT
00652 1373 TAD (OUTBUF-1
00653 3014 DCA 14 /14 IS OUTPUT POINTER
00654 1372 TAD (-400
00655 3021 DCA OUTCNT /RESET OUTPUT COUNTER
00656 2227 ISZ ENTNAM+1
00657 5640 JMP I DUMP
00660 4311 JMS ERROR /THIS HAPPENS RARELY

/ROUTINE TO CLOSE THE OUTPUT FILE
00661 7300 CLOSE, CLA CLL
00662 1022 TAD CKSM
00663 4767 JMS CODE /OUTPUT NEGATIVE OF CHECKSUM
00664 4771 JMS LEADER /OUTPUT SOME LEADER
00665 1366 TAD (232 /CTRL Z
00666 4765 JMS LOAD
00667 4765 JMS LOAD
00670 4765 JMS LOAD /TO MAKE SURE CTRL Z WAS LOADED
00671 3414 CLLP, DCA I 14 /LOAD ZERO IN REST OF BLOCK
00672 2021 ISZ OUTCNT
00673 5271 JMP CLLP
00674 4240 JMS DUMP /OUTPUT LAST BUFFER
00675 1100 TAD NAMES
00676 6212 CIF 10
00677 4764 JMS I (7700
00700 0004 4 /USR CLOSE FILE
00701 0101 CLONAM, NAMES+1 /GENERAL POINTER TO NAME
00702 0000 CLOCNT, 0 /NUMBER OF BLOCKS IN FILE
00703 4311 JMS ERROR
00704 5774 JMP START

00705 6201 OOPS, CDF 0
00706 6212 CIF 10
00707 4764 JMS I (7700
00710 0007 7 /USER ERROR
00711 0000 ERROR, 0
00712 5305 JMP OOPS

00764 7700
00765 0245
00766 0232
00767 0541
00770 0400
00771 0307
00772 7400
00773 4777

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00774 0200
00775 4001
00776 7766
00777 0116

S

ADDRES 0023
BINFLD 0024
BSWZ 0035
CHAR 0026
CHARK 0034
CHC 0033
CHECK 0236
CHR1 0027
CHR2 0030
CHR3 0031
CHSF 0275
CHS1 0272
CKSM 0022
CLLP 0671
CLOCNT 0702
CLONAM 0701
CLOSE 0661
CODE 0541
COUNT 0020
CTLBUF 6000
DBLOK 0646
DUMP 0640
ENTNAM 0626
ERROR 0711
EXOK 0600
GETBLK 0512
INBLK 0422
INCONT 0025
INFILE 0117
INHND 0413
INPUT 0444
LOCT 0032
LEADER 0307
LOAD 0245
NAMES 0100
NAMLP 0222
OOPS 0705
OUTBUF 5000
OUTCNT 0021
OUTHND 0614
PUT 0301
ROBLK 0515
RDFN 0513
READ 0400
START 0200
TRANS 0521
USR 0200