



" adm

```
lac 017777 i
sad d4
jmp nofiles
lac 017777
tad d1
dac name
jms connect
sys time
```

```
llss 9
ecla llss 3
tad o60
alss 9
dac snumb
ecla llss 3
tad o60
alss 9
dac snumb+1
ecla llss 3
tad o60
alss 9
```

```
dac snumb+2
```

```
lac d1
sys write; snumb; 3
lac d1
```

```
sys write; o12; 1
```

```
jms gcard; <$;<*><$;<7;<c;0
```

```
jms gcard; <$;<*><$;<r;<c;<d;0
```

```
jms gcard; <$;<%>6;<$;<n;<u;<m;<b;<%>3;<7;<c
```

snumb:

```
<x;<x;<x;<,<3;<1;0
```

```
jms gcard; <$;<%>6;<i;<d;<e;<n;<t;<%>3;<m;<0;<1;<3;<0;<,<
<m;<3;<2;<2;<,<i;<k;<e;<n;0
```

```
jms gcard; <$;<%>6;<$;<e;<l;<e;<c;<t;<%>2;<k;<e;<n
</;<d;<m;<p;<o;<f;<f;0
```

```
jms gcard; <$;<%>6;<l;<i;<m;<i;<t;<s;<%>2;<3;<,<,<,<
<9;<0;<0;<0;0
```

```
jms gcard; <$;<%>6;<d;<a;<t;<a;<%>4;<i;<+>S,
<n;<c;<k;<$;<u;<m;<,<
```

```
<c;<0;<p;<y;0
```

```
jmp floop1
```

```
floop1:
```

```
lac fi
```

```
sys close
```

```
floop1:
```

```
lac 017777 i
```

```
sad d4
```

```
jmp done
```

```
tad dm4
```

```
dac 017777 i
```

```
lac name
```

```
tad d4
```

```
dac name
```

```
sys open; name: ..; 0
```

```
spa
```

```
jmp ferlop
```

```
dac fi
```

```
-1
```

tad name
dac 8
r4

dac c1

1:

lac 8 i
jms putv
isz c1
jmp 1b
jms gcard; 0
jms flush

lac o200500 " first card, 7/9
dac buf
dzm buf+1 " seq

cloop:

dzm buf+2 " word count
dzm buf+3 " checksum
law buf+3
dac 10
-44
dac c1

wloop:

jms getword
jmp eof
dac 10 1
add buf+3
dac buf+3 " check sum
isz buf+2 " word count
isz c1
jmp wloop

lac buf+3
add buf
add buf+1
add buf+2
dac buf+3 " final check sum
jms putcard
lac buf
and o577777 " not first card
dac buf
isz buf+1 " sequence
jmp cloop

eof:

dzm 10 1
isz c1
jmp eof

lac buf
xor o400000
dac buf " last card
lac buf+3
add buf
add buf+1
add buf+2
dac buf+3 " final check sum
jms putcard
jmp floop

```
getword: 0
lac ipt
sad eipt
jmp 1f
lac ipt i
isz ipt
isz getword
jmp getword i
```

```
1:
lac fi
sys read; ibuf; 64
sna
jmp getword i
tad iipt
dac eipt
lac iipt
dac ipt
jmp getword+1
```

```
ipt: 0
eipt: 0
iipt: ibuf
```

```
putcard: 0
r48
dac c1
law buf-1
dac 10
```

```
1:
lac 10 i
lmq
-3
dac c2
```

```
2:
ecla llss 6
tad lactab
dac ,+1
lac ,.
dac opt i
isz opt
isz c2
jmp 2b
isz c1
jmp 1b
```

```
+16
dac c1
cla
```

```
1:
dac opt i
isz opt
isz c1
jmp 1b
law 0114
jms message; tbuf
law tbuf
dac opt
jmp putcard i
jmp floop
```

```
ferror:
  lac name
  dac 1f
  lac d1
  sys write; 1;.i; 4
  lac d1
  sys write; 1f; 1
  jmp floop1
1: 077012
```

```
hangup:
  lac d1
  sys write; m1; m1s
  jmp stop
```

```
abort:
  lac d1
  sys write; m2; m2s
  jmp stop
```

```
nofiles:
  lac d1
  sys write; m3; m3s
  sys exit
```

```
discon:
  lac d1
  sys write; m4; m4s
  jmp stop
```

```
m1:
  <ha>;<ng>;<up>;012
m1s = ,=m1
m2:
  <ab>;<or>;<te>;<a 012
m2s = ,=m2
m3:
  <us>;<ag>;<e;<;040;<ad>;<m 040; <fi>;<le>;<s 012
  <di>;<al>;040;<x;<5;<3;<8;<0 040; <on>;040;<th>;<e 040
  <da>;<ta>;<ph>;<on>;<e 012
m3s = ,=m3
m4:
  <di>;<sc>;<on>;<ne>;<ct>;<ed>;012
m4s = ,=m4
```

```
stop:
  dpof
  las
  and 0400000
  sna
  sys save
  sys exit
```

```
carrier: 0100000
ilock: 040000
totime: 300
disflg: 0
```

```
flush: 0
  lac noc
  sna
```

```
jmp flush i
law 0104
jms message; tbuf
law tbuf
dac opt
dzm noc
jmp flush i
```

```
gcard: 0
lac gcard i
isz gcard
sna
jmp 3f
lrss 9
sad 045
jmp 1f
jms putc
jmp gcard+1
```

```
1:
-1
tad gcard i
cma
dac 2f
isz gcard
```

```
1:
law 040
jms putc
isz 2f
jmp 1b
jmp gcard+1
```

```
2: 0
```

```
3:
lac noc
sna
jmp gcard i
sad d80
jmp gcard i
law 040
jms putc
jmp 3b
```

```
done:
jms gcard; <$;<%;>6;<e;<n;<d;<c;<o;<p;<y;>0
jms gcard; <$;<%;>6;<s;<y;<s;<o;<u;<t;<%;>2;<p;<*>0
jms gcard; <$;<%;>6;<e;<n;<d;<j;<o;<b;>0
```

```
-1
dac disflg
```

```
1:
jms gcard; <$;<*><$;<d;<i;<s;>0
jmp 1b
```

```
putw: 0
dac 1f
lrss 9
jms putc
lac 1f
jms putc
jmp putw i
```

```
1: 0
```

```
putc: 0
```

and o177
dac opt i
-0141

tad opt i
spa
jmp 1f
-0173

tad opt i
sma

jmp 1f
-040

tad opt i
dac opt i

1:

isz opt

isz noc

lac noc

sad d160

skp

jmp putc i

dzm noc

law tbuf

dac opt

law 0110

jms message; tbuf

jmp putc i

noc: 0

opt: tbuf

connect: 0

dpon

dpop

law 4

sys sysloc

tad d14

dac systime

law 11

sys sysloc

dac dpstat

tad d1

dac dpread

tad d1

dac dpwrite

tad d1

dac dpchar

dzm dpstat i

las

dac opch

1:

las

sad opch

skp

jmp abort

sys time

lac dpstat i

and ilock

sna

jmp 1b

11
10
7
6
5
4
3

```
law 041
dac echoch
law 0102
jms message; 0
jmp i connect
```

```
message: 0
dac stsch
```

```
retry:
```

```
lac dpstat i
and carrier
sza
jmp retry
dprs
and ilock
sna
jmp hangup
lac d1
dac dpwrite i
sys time
lacq
tad totime
dac rctim
```

```
" put out 6 sync characters
-6
```

```
dac c2
```

```
1:
```

```
law 026
jms transch
isz c2
jmp 1b
```

```
" put out stx character
```

```
law 002
jms transch
dzm sum
```

```
" put out the status character
```

```
lac stsch
jms transch
```

```
" echo the sequence character
```

```
lac echoch
jms transch
```

```
" if there is a buffer pointer
```

```
" put out 160 words of data
```

```
-1
tad i message
```

```
spa
```

```
jmp 2f
```

```
dac 10
```

```
-160
```

```
dac c2
```

```
1:
```

```
lac 10 i
```

```
jms transch
```

```
isz c2
```

```
jmp 1b
```


" put out etx character
2:

law 003
jms transch

" put out lateral parity
lac sum
jms transch

" put out a sync
law 026
jms transch

" loop looking for stx

1:
jms recvch
sad o2
skp
jmp 1b
dzm sum

" pick up op code
jms recvch
spa
jmp error
dac opch

" pick up sequence character.
jms recvch
spa
jmp error
dac seqch
sad echoch
jmp error

" skip over data block to etx character

1:
jms recvch
spa
jmp error
sad o3
skp
jmp 1b

" pick up the lateral parity character
jms recvch
lac sum
and o177
sza
jmp error

" and exit

lac seqch
dac echoch

-1
dac 7

isz message

lac opch

sad o122

jmp i message

```
lac distlg
sna
jmp discon
jmp stop
```

```
transch: 0
lmq
xor sum
dac sum
```

```
1:
jms checktim
lac dpwrite i
sna
jmp 1b
dzm dpwrite i
lacq
dpwc
jmp i transch
```

```
recvch: 0
```

```
1:
jms checktim
lac dpread i
sna
jmp 1b
dzm dpread i
lac dpchar i
xor sum
dac sum
lac dpchar i
jmp i recvch
```

```
checktim: 0
```

```
lac systime i
cma
tad rctim
spa
jmp error
jmp i checktim
```

```
error:
```

```
lac stsch -
lmq
lac b2 ←
omq
dac stsch
jmp retry
```

```
d1: 1
```

```
d4: 4
```

```
o60: 060
```

```
o12: 012
```

```
dm4: -4
```

```
o45: 045
```

```
o177: 0177
```

```
d160: 160
```

```
d80: 80
```

```
d14: 14
```

```
o400000: 0400000
```

```
o577777: 0577777
```

```
o200500: 0200500
```

0122: 0122
03: 3
02: 2

0 1 2 3 4 5 6 7
lactabl lac .+1
00060;00061;00062;00063;00064;00065;00066;00067
10 00070;00071;01033;00043;0100;0072;0076;0077
20 00040;0101;0102;0103;0104;0105;0106;0107
30 0110;0111;00046;00056;01035;00050;00074;01034
40 01036;0112;0113;0114;0115;0116;0117;0120
50 0121;0122;00055;00044;00052;00051;00073;00047
60 00053;00057;0123;0124;0125;0126;0127;0130
70 01031;01032;01037;00054;00045;00075;00042;00041

dpstat: .+.+1
dpread: .+.+1
dpwrite: .+.+1
dpchar: .+.+1
systime: .+.+1
opch: .+.+1
stsch: .+.+1
echoch: .+.+1
seqch: .+.+1
tbuf: .+.+160
buf: .+.+48
ibuf: .+.+64
rctim: .+.+1
fi: .+.+1
c1: .+.+1
c2: .+.+1
sum: .+.+1

dpon = 0704701
dpof = 0704704
dpvc = 0704722
dpop = 0704764
dprs = 0704752

11
10
7
6
5
4
3

2

" ald

law 17
sys sysloc
dac crread
tad d1
dac crchar

law 4
sys sysloc
tad d14
dac systime

loop:

jms holcard
lac o12
dac buf+4
lac d1
sys write; buf; 5
law 017
sys creat; buf
spa
jmp ferror
dac fo
dzm noc
law obuf
dac opt
dzm seq

cloop:

jms bincard
lac buf
and o700
sad o500
skp
jmp notbin

-48
dac c1
lac buf+3
dac sum
dzm buf+3
law buf-1
dac 10
cla

1:

add 10 1
isz c1
jmp 1b
sad sum
skp
jmp badcksum

11 lac buf+1
12 sad seq
skp
jmp badseq

7
6 -1
5 tad buf+2
4 cma
3 dac c1

```
law buf+3
dac 10
```

1:

```
lac 10 i
jms putword
isz c1
jmp 1b
```

```
isz seq
lac buf
sma
jmp cloop
lac noc
sna
jmp 1f
dac 0f
lac fo
sys write; obuf; 0;..
```

1:

```
lac fo
sys close
sys exit
```

holcard: 0

```
jms rawcard
lac 1f
dac buf
lac 1f+1
dac buf+1
lac 1f+2
dac buf+2
lac 1f+3
dac buf+3
jmp holcard i
```

1: <xx>;040040;040040;040040

bincard: 0

```
jms rawcard
-24
dac c
law tbuf-1
dac 8
law buf-1
dac 9
```

1:

```
lac 8 i
alss 6
dac 1f
lac 8 i
dac 1f+1
lac 8 i
dac 1f+2
lac 1f+1
lrss 6
xor 1f
dac 9 i
lac 1f+1
alss 12
xor 1f+2
dac 9 i
isz c
```

```
jmp 1b
jmp bincard i
1: 0;0;0
```

```
rawcard: 0
lac systime i
tad wtime
dac tmtime
-80
dac c
law tbuf-1
dac 8
crsb
```

```
1: dzm crread i
```

```
2: lac systime i
cma
tad tmtime
spa
jmp timeout
lac crread i
sna
jmp 2b
lac crchar i
dac 8 i
isz c
jmp 1b
law
dac 1f
isz 1f
jmp ,-1
jmp rawcard i
```

```
1: 0
```

```
badcksum:
lac d1
sys write; m1; m1s
jms wait
jmp cloop
```

```
badseq:
lac d1
sys write; m2; m2s
jms wait
jmp cloop
```

```
notbin:
lac d1
sys write; m3; m3s
jms wait
jmp cloop
```

```
11
10 timeout:
lac d1
sys write; m4; m4s
7 jms wait
6 jmp rawcard+1
5
```

```
4 m1:
3 <ba>;<d 040; <ch>;<ec>;<ks>;<um>; 012
```

m1s = .-m1

m2:
<ba>;<0 040; <se>;<qu>;<en>;<ce>; 012
m2s = .-m2

m3:
<no>;<t 040; <hi>;<na>;<ry>; 012
m3s = .-m3

m4:
<ti>;<me>;<ou>;<t 012
m4s = .-m4

wait: 0

las
dac 2f

1:

las
sad 2f
jmp 1b
and d1
sna
jmp wait i
sys save

2: 0

putword: 0

dac opt i
isz opt
isz noc
lac noc
sad d2048

skp
jmp putword i
lac fo
sys write; obuf; 2048
dzm noc
law obuf
dac opt
jmp putword i
jmp putword i

d1: 1

d2048: 2048

d14: 14

o500: 0500

o700: 0700

o12: 012

wtime: 300

c: ., +1

c1: ., +1

buf: ., +100

tbuf: ., +80

fo: ., +1

seq: ., +1

sum: ., +1

obuf: ., +2048

noc: ., +1

opt: ., +1

system: . = . + 1
crradi: . = . + 1
crchar: . = . + 1
tmtime: . = . + 1

crsb = 0706744

11
10
9
8
7
6
5
4
3

3

" apr

lac 017777 i
sad d4

jmp nofiles

lac 017777

tad d1

dac name

jms connect

sys time

llss 9

ecla llss 3

tad o60

alss 9

dac snumb

ecla llss 3

tad o60

alss 9

dac snumb+1

ecla llss 3

tad o60

alss 9

dac snumb+2

lac d1

sys write; snumb; 3

lac d1

sys write; o12; 1

jms gcard; <\$;<*><\$;<7;<c;<%>67;0

jms gcard; <\$;<*><\$;<r;<c;<d;<K%>6d;0

jms gcard; <\$;<%>6;<s;<n;<u;<m;<b;<%>3;<7;<c

snumb:

<x;<x;<x;<,;<3;<1;<v;<49;0

jms gcard; <\$;<%>6;<i;<d;<e;<n;<t;<%>3;<m;<0;<1;<3;<0;<,;

<m;<3;<2;<2;<,;<k;<e;<n;<v;<48;0

jms gcard; <\$;<%>6;<s;<e;<l;<e;<c;<t;<%>2;<k;<e;<n

</;<p;<r;<n;<o;<f;<f;<v;<47;0

jms gcard; <\$;<%>6;<l;<i;<m;<l;<t;<s;<%>2;<2;<,;<,;<,;

<9;<0;<0;<0;<v;<49;0

jms gcard; <\$;<%>6;<d;<a;<t;<a;<%>4;<i;<+;<s;<,;<c;<o;<p;<y;<v;<49;0

jmp 1f

floop:

lac fi

sys close

1:

law 041

jms putc

law 040

jms putc

law 044

jms putc

law 040

jms putc

floop1:

lac 017777 i

sad d4

jmp done

tad dm4

dac 017777 i

lac name

tad d4

dac name

```

SYS open; name; ...; 0
SPA
jmp ferror
dac fi
jmp loop

```

ferror:

```

lac name
dac 1f
lac d1
SYS write; 1f; 4
lac d1
SYS write; 1f; 1
jmp floop1

```

1: 077012

loop:

```

dzm crflg
dzm col
law cbuf1-1
dac 8
-200
dac c

```

1:

```

dzm 8 i
isz c
jmp 1b

```

cloop:

```

jms getc
dac ch
sad 04
jmp pass2
sad 012
jmp pass2
sad 010
jmp bksp
sad 015
jmp creat
sad 040
jmp 1f
law cbuf1
tad col
dac t
lac t i
sza
jmp inb2
lac ch
dac t i

```

1:

```

isz col
jmp cloop

```

inb2:

```

law cbuf2
tad col
dac t
dac crflg
lac ch

```

0-1-5 R=1
1-2-5 = 2
2-3-5 = 3
3-4-5 = 4
4-5-5 = 5

~~sad 011~~
jmp tab

tab: isz eol
lac col
call; 7div; 5
~~...~~
isz
jmp tab
jmp eol

```
dac t i
isz col
jmp cloop
```

```
bksp:
-1
tad col
spa
cla
dac col
jmp cloop
```

```
cret:
dzm col
jmp cloop
```

```
pass2:
law cbuf1
```

```
p21:
dac t
dzm case
-100
dac c
dzm nblank
```

```
p2loopi:
lac t i
sna
jmp blk

-1
tad nblank
spa
jmp 2f
cma
dac c1
```

```
1:
law 040
jms putc
isz c1
jmp 1b
dzm nblank
```

```
2:
law casetab
tad t i
dac t1
lac t1 i
sad case
jmp 1f
sad d2
jmp 1f
dac case
law 041
jms putc
law 041
jms putc
```

```
1:
lac t i
sad o44
jmp dol
```

```
sad o41
law 045
sad o77
law 0100
sad o134
law 0137 " ??
sad o137
law 055
sad o140
law 0134
sad o173
law 0133
sad o174
law 046
sad o175
law 0135
sad o176
law 0137 " ??
jms putc
jmp p2test
```

```
dol:
law 044
jms putc
law 044
jms putc
jmp p2test
```

```
blk:
isz nblank
```

```
p2test:
isz t
isz c
jmp p2loop
lac crflg
sna
jmp 1f
law 041
jms putc
law 060
jms putc
law 044
jms putc
law 040
jms putc
dzm crflg
law cbuf2
jmp p21
```

```
1:
law 044
jms putc
law 040
jms putc
lac ch
sad o4
jmp floop
jmp loop
```

```
getc: 0
lac ipt
```

```
sad eipt
jmp 1f
dac 2f
add o400000
dac ipt
ral
lac 2f i
szl
lrss 9
and o177
sna
jmp getc+1
jmp getc i
```

1:

```
lac fi
sys read; rbuf; 64
sna
jmp 1f
tab iipt
dac eipt
lac iipt
dac ipt
jmp getc+1
```

1:

```
lac o4
jmp getc i
```

hangup;

```
lac d1
sys write; m1; m1s
jmp stop
```

abort:

```
lac d1
sys write; m2; m2s
jmp stop
```

nofiles:

```
lac d1
sys write; m3; m3s
sys exit
```

discon:

```
lac d1
sys write; m4; m4s
jmp stop
```

m1:

```
<ha>;<ng>;<up>;012
```

m1s = ,-m1

m2:

```
<ab>;<or>;<re>;<d 012
```

m2s = ,-m2

m3:

```
<us>;<ag>;<e;<;040;<ap>;<r 040; <fi>;<le>;<s 012
<di>;<al>;<40;<x;<5;<3;<8;<0 040; <oh>;<040;<th>;<e 040
<da>;<ta>;<ph>;<on>;<e 012
```

m3s = ,-m3

m4:

```
<di>;<sc>;<on>;<ne>;<ct>;<ed>;012
```

m4s = ,-m4

```
stop:
  dprof
  sys exit
```

```
ipt: 0
eipt: 0
iipr: rbuf
fi: 0
```

```
opt: tbuf
noc: 0
```

```
carrier: 01000000
ilock: 040000
totime: 300
disflg: 0
```

2 - both cases

```
casetab:
0 2;2;2;2;2;2;2;2;2;2
1 2;2;2;2;2;2;2;2;2;2
2 2;2;2;2;2;2;2;2;2;2
3 2;2;2;2;2;2;2;2;2;2
4 2;2;2;2;2;2;2;2;2;2
5 2;2;2;2;2;2;2;2;2;2
6 2;2;2;2;2;2;2;2;2;2
7 2;2;2;2;2;2;2;2;2;2
10 0;0;0;0;0;0;0;0;0;0
11 0;0;0;0;0;0;0;0;0;0
12 0;0;0;0;0;0;0;0;0;0
13 0;0;0;0;0;0;0;0;2;1
14 1;1;1;1;1;1;1;1;1;1
15 1;1;1;1;1;1;1;1;1;1
16 1;1;1;1;1;1;1;1;1;1
17 1;1;1;1;1;1;1;1;1;1
```

0 - 100 case
1 - 200 case
2 - 300 case

```
gcard: 0
lac gcard i
isz gcard
sna
jmp gcard i
lrss 9
sad 045
jmp 1f
jms putc
jmp gcard+
```

3: lac noc
sna
jmp gcard i
sad 080
jmp gcard i
law 040
jms putc
jmp 3b

```
1:
-1
tad gcard i
cma
dac 2f
isz gcard
```

```
1:
law 040
jms putc
isz 2f
jmp 1b
jmp gcard+
```

```
2: 0
```

```
done:
lac noc
sna
```



```
jmp 1f
sad d72
jmp 1f
law 040
jms putc
jmp done
```

```
1: jms gcard; <$;<%;6;<e;<n;<d;<c;<o;<p;<y;<x;58;0
jms gcard; <$;<%;6;<s;<y;<s;<o;<u;<t;<x;2;<p;<*<x;55;0
jms gcard; <$;<%;6;<e;<n;<d;<j;<o;<b;<x;59;0
-1
dac disflg

1: jms gcard; <$;<*<s;<d;<i;<s;<x;66;0
jmp 1b
```

```
putc; 0
and 0177
dac opt i
-0141
tad opt i
spa
jmp 1f
-0173
tad opt i
sma
jmp 1f
-040
tad opt i
dac opt i
```

```
1: isz opt
isz noc
lac noc
sad d144
skp
jmp putc i
dzm noc
law tbuf
dac opt
law 0110
jms message; tbuf
jmp putc i
```

```
connect: 0
```

```
dpon
dpop
```

```
law 4
sys sysloc
tad d14
```

```
dac systime
```

```
law 11
```

```
sys sysloc
```

```
dac dpstat
```

```
tad d1
```

```
dac dpread
```

```
tad d1
```

```
dac dpwrite
```

```
tad d1
```

```
dac dpchar
```

dzm dpstat i

las

dac opch

1:

las

sad opch

skp

jmp abort

sys time

lac dpstat i

and ilock

sna

jmp 1b

law 041

dac echoch

law 0102

jms message; 0

jmp i connect

message: 0

dac stsch

retry:

lac ~~dpstat~~ i

and carrier

sza

jmp retry

dprs

and ilock

sna

jmp hangup

lac d1

dac dpwrite i

sys time

lacq

tad totime

dac rctim

" put out 6 sync characters

-6

dac c2

1:

law 026

jms transch

isz c2

jmp 1b

" put out stx character

law 002

jms transch

dzm sum

" put out the status character

lac stsch

jms transch

" echo the sequence character

lac echoch

jms transch

*carrier + ilock
drop
carrier = 0
ilock = 1*

" if there is a buffer pointer
" put out 160 words of data

-1
tad i message
spa
jmp 2f
dac 10
jms transcd
jms transcd

" put out etx character
2:

law 003
jms transch

" put out lateral parity
lac sum
jms transch

" put out a sync
law 026
jms transch

" loop looking for stx
1:

jms recvch
sad o2
skp
jmp 1b
dzm sum

" pick up op code
jms recvch
spa
jmp error
dac opch

" pick up sequence character
jms recvch
spa
jmp error
dac seqch
sad echoch
jmp error

" skip over data block to etx character
1:

jms recvch
spa
jmp error
sad o3
skp
jmp 1b

" pick up the lateral parity character
jms recvch
lac sum
and o177
sza
jmp error

```
" and exit
lac seqch
dac echoch
-1
dac 7
isz message
lac opch
sad o122
jmp i message
lac disflg
sna
jmp discon
jmp stop
```

```
transcd: 0
-72
dac c2
```

```
1:
lac 10 i
jms transch
isz c2
jmp 1b
-8
dac c2
```

```
1:
law 040
jms transch
isz c2
jmp 1b
jmp transcd i
```

```
transch: 0
```

```
lmq
xor sum
dac sum
```

```
1:
jms checktim
lac dpwrite i
sna
jmp 1b
dzm dpwrite i
lacq
dpwc
jmp i transch
```

```
recvch: 0
```

```
1:
jms checktim
lac dpread i
sna
jmp 1b
dzm dpread i
lac dpchar i
xor sum
dac sum
lac dpchar i
jmp i recvch
```

```
checktim: 0
lac systime i
```

```
cma
tad rctim
spa
jmp error
jmp i checktim
```

```
error:
lac stsch
lmg
lac o2
omq
dac stsch
jmp retry
```

```
d1: 1
o60: 060
o122: 0122
d72: 72
o45: 045
o134: 0134
o140: 0140
o41: 041
o44: 044
o77: 077
o137: 0137
o173: 0173
o174: 0174
o175: 0175
o176: 0176
d128: 128
o400000: 0400000
o177: 0177
o2:d2: 2
o3: 3
d14: 14
d144: 144
o12: 012
d4:o4: 04
dm4: -4
o10: 010
o15: 015
o40: 040
```

```
crflg: .,+,+1
col: .,+,+1
t: .,+,+1
t1: .,+,+1
c: .,+,+1
c1: .,+,+1
c2: .,+,+1
dpstat: .,+,+1
dpread: .,+,+1
dpwrite: .,+,+1
dpchar: .,+,+1
systeme: .,+,+1
opch: .,+,+1
stsch: .,+,+1
echoch: .,+,+1
seqch: .,+,+1
tbuf: .,+,+144
rbuf: .,+,+64
```

rctim: . = . + 1

sum: . = . + 1

ch: . = . + 1

nblank: . = . + 1

case: . = . + 1

cbuf1: . = . + 100

cbuf2: . = . + 100

dpon = 0704701

dpor = 0704704

dprc = 0704722

dpop = 0704764

dprs = 0704752

11

10

7

6

5

4

3



4

" AS

jms init1

assm1:

lac eofflg
sza
jmp assm2
lac passno
sza
jmp finis
jms init2

assm2:

jms gchar
sad d4
jmp assm1
sad d5
jmp assm1
lac char
dac savchr
jms gpair
lac rator
jms betwen; d1; d6
jmp assm3
jms expr
lac passno
sza
jms process
isz dot+1
nop
lac dot+1
and 017777
sad dot+1
jmp assm1
jms error; >>
dzm dot+1
jmp assm1

assm3:

lac rand
sad d2
jmp assm4
sza
jmp assm6
lac rator
sza
jmp assm6
lac rand+1
jms betwen; dm1; d10
jmp assm6
dac name
tad fbxp
dac lvrans
lac i lvrans
dac name+1
isz i lvrans
lac 0146
dac name+2
dzm name+3
jms tlookup
-1


```
    dac fbflg
assm4:
    lac rand+1
    taã d4
    dac lvrãã
    lac rator
    sza
    jmp assm5
    lac dot
    dac r
    lac dot+1
    dac r+1
    jmp 1f
```

```
assm5:
    jms gpair
    jms expr
1:
    lac r
    dac i lvrãã
    isz lvrãã
    lac r+1
    dac i lvrãã
    lac fbflg
    sna
    jmp assm1
    dzm fbflg
    dzm name+1
    lac o142
    dac name+2
    jms lookup
    jmp assm4
```

```
assm6:
    jms error; x>
    jmp assm1
```

```
init1: 0
    lac d1
    sys write; 1f; 2f-1f
    dzm passno
    lac o56040
    dac dot-4
    lac o56056
    dac cmflx-4
    lac o40040
    dac dot-3
    dac dot-2
    dac dot-1
    dac cmflx-3
    dac cmflx-2
    dac cmflx-1
    dzm iof
    jms init
    jmp i init1
```

```
1:
    0111012
```

```
2:
```

```
init2: 0
    lac d1
```

```

dac passno
sys write; 1f; 2f-1f
jms init
lac o17
sys creat; 2f
dac bfo
sys open; 2f; 0
dac bfi
dzm bufadd
jms copyz; buf; 64
jmp i init2

```

```

1: 01111111;012000
2: 0141056;0157165;0164040;040040

```

```

init: 0
lac i 017777
dac narg
lac 017777
tad d1
dac fname
-1
dac eofflg
jms nextfil
jms icinit
dzm saychr
dzm com1g
lac d1
dac dot
dzm dot+1
dzm cmflx
lac d4096
dac cmflx+1
dzm fbflg
jms copyz; fbxp; fbx; 10
jmp i init

```

```

finis:
lac iof
sys close
jms bufwr
lac bfi
sys close
lac bfo
sys close
-1
tad namsiz
cma
rcl
dac char
rcl
tad char
dac 1f
lac o17
sys creat; n,out
dac bfi
sys write; namlst; 1: 0
lac bfi
sys close
sys exit

```

11
10
9
7
6
5
4
3

n.out:
0156056;0157165;0164040;040040

process: 0
lac dot+1
dac lvrand
lac dot
sad d3
jmp proc4
sza
jmp proc1
r1
tad cmflx+1
cma
tad lvrand
dac lvrand

proc1:
lac lvrand
spa
jmp proc4
and o17700
sad bufadd
jmp proc2
jms bufvr
jms copyz; buf; 64
lac lvrand
and o17700
dac bufadd
dac 1f
lac bfi
sys seek; 1: 0; 0
spa
jmp proc2
lac bfi
sys read; buf; 64

proc2:
lac lvrand
and o77
jms betwen; dm1; maxsto
dac maxsto
tad bufp
dac lvrand
lac r
sna
jmp proc3
sad d3
jmp proc5
lac cmflx+1
tad r+1
dac r+1

11
12
proc3:
lac r+1
dac i lvrand
7
6
5
4
3
jmp i process

proc4:
jms error; .>
lac d1

```
    dac dot
    dzm dot+1
    jmp skip
```

```
proc5:
    jms error; u>
    jmp proc3
```

```
bufwr: 0
    lac bfo
    sys seek; bufadd: 0; 0
    isz maxsto
    lac bfo
    sys write; bufp: buf; maxsto: -1
    -1
    dac maxsto
    jmp i bufwr
```

```
;number: 0
    dac 3f
    lac d1000
    dac 2f
1:
    lac 3f
    cll
    idiv; 2: 0
    dac 3f
    lacq
    tad o60
    dac i 8
    lac 2b
    cll
    idiv; 10
    lacq
    dac 2b
    sza
    jmp 1b
    jmp i number
3: 0
```

```
getc: 0
    lac i getsc
    dac sctalp
    isz getsc
    lac i sctalp
    dac sctal
    add o400000
    dac i sctalp
    ral
    lac i sctal
    szl
    lrss 9
    and o177
    jmp i getsc
```

```
putc: 0
    and o177
    lmq
    lac i putsc
    dac sctalp
    isz putsc
```

```
lac i sctalp
dac sctal
add o400000
dac i sctalp
sma cla
jmp 1f
llss 27
dac i sctal
lrss 9
jmp i putsc
```

```
1:
lac i sctal
omq
dac i sctal
lacq
jmp i putsc
```

```
sctalp: 0
sctal: 0
```

```
betwen: 0
dac 2f
lac i betwen
dac 3f
isz betwen
lac i 3f
cma
tad 2f
spa
jmp 1f
lac i betwen
dac 3f
isz betwen
lac i 3f
cma
tad d1
tad 2f
spa
```

```
1:
isz betwen
lac 2f
jmp i betwen
2: 0
3: 0
```

```
copyz: 0
-1
tad i copyz
dac 8
isz copyz
lac i copyz
cma
tad d1
dac 2f
isz copyz
```

```
1:
dzm i 8
isz 2f
jmp 1b
jmp i copyz
```

2: 0

error: 0

lac passno
sza
jmp 1f
isz error
jmp i error

1:

-1
tad mesp
dac 8
lac i error
dac i 8
lac o40
dac i 8
lac rator
sad d5
jmp 1f
lac savchr
sad o12
jmp 1f
lac lineno
jmp 2f

1:

-1
tad lineno

2:

jms number
lac o12
dac i 8
-2
tad mesp
cma
tad 8
dac 1f
lac d1
sys write; mesp: mes; 1: 0
isz error
jmp i error

skip:

lac rator
sad d5
jmp assm1

1:

jms gchar
sad d5
jmp assm1
jmp 1b

ioinit: 0

jms copyz; iobuf; 64
lac iof
sys read; iobufp; iobuf; 64
sna
jms nextfil
lac iobufp
dac tal
-129
dac talc

jmp i ioinit

nextfil: 0

lac d1
dac lineno
lac iof
sza
sys close

nf1:

lac narg
sad d4
skp
jmp 1f
dzm eofilg
jmp i nextfil

1:

tad dm4
dac narg
lac fname
tad d4
dac fname
sys open; frame: 0; 0
dac iof
sma
lac passno
sna
jmp nextfil i
lac fname
dac 1f
lac d1
sys write; 1; 0; 4
lac iof
sma
jmp 1f
lac d1
sys write; emes; 2
sys exit

1:

lac d1
sys write; emes+1; 1
jmp i nextfil

emes:

040077;012000

gchar: 0

lac savchr
dzm savchr
sza
jmp gch3
lac eofilg
sza

jmp 1f
lac o12
jmp gch3

1:

isz talc
skp
jms ioinit
jms getsc; tal
sna
jmp gchar+1

```
sad o177
jmp gchar+1
sad o12
skp
jmp 1f
dzm com1q
isz lineno
```

```
1:
sad o42
dac com1q
dac char
lac com1q
sza
jmp gchar+1
lac char
```

```
gch3:
dac char
jms betwen; d0; o200
cla
tad lactaf
dac ,+1
lac 0
jmp i gchar
```

```
gsymb: 0
jms gchar
dac rator
tad jmpsw1
dac 1f
lac char
sad o74
jmp lgot
dac namc
jms gchar
lac char
sad o76
jmp rgot
dac savchr
lac namc
dac char
```

```
1:
jmp 0
```

```
jmpsw1:
jmp ,+1
jmp i gsyrb0
jmp i gsyrb1
jmp i gsyrb2
jmp i gsyrb3
jmp gs1
jmp i gsyrb4
11 jmp gs2
10 jmp gs3
```

```
badchr:
7 jms error; g>
```

```
6 1:
5 jms gchar
4 lac char
3 sad o12
```



```
skp
jmp 1b
dac savchr
jmp gsymb+1
```

```
lqot:
jms gchar
lac o40
dac savchr
lac char
alss 9
jmp 1f
```

```
rqot:
lac namc
1:
dac rand+1
lac d7
dac rator
jmp i gsymb
```

```
gs1:
jms gchar
sad d4
jmp gs1
lac char
dac savchr
jmp i gsymb
```

```
gs2:
lac namep
dac tal1
-7
dac tal1c
lac char
jms putsc; tal1
```

```
gnam1:
jms gchar
jms betwen; d5; d8
jmp gnam3
lac char
jms putsc; tal1
isz tal1c
jmp gnam1
```

```
gnam2:
jms gchar
jms betwen; d5; d8
skp
jmp gnam2
lac char
dac savchr
jms lookup
jmp i gsymb
```

```
gnam3:
lac char
dac savchr
1:
lac o40
```

```
jms putsc; tal1
isz tal1c
jmp 1b
jms lookup
jmp i gsyms
```

```
gs3:
  dzm rand+1
  lac char
  sad o60
  jmp 1f
  lac d10
  jmp 2f
```

```
1: lac d8
```

```
2: dac num2
```

```
num1:
  lac rand+1
  cll
  mul
```

```
num2: 0
  lacq
  tad char
  tad dm48
  dac rand+1
  jms gchar
  sad d7
  jmp num1
  lac char
  dac savchr
  lac rand+1
  jms betver; dm1; d10
  jmp i gsyms
  dac name
  tad fbxp
  dac name+1
  lac i name+1
  dac name+1
  lac savchr
  sad o146
  jmp 1f
  sad o142
  skp
```

```
jmp i gsyms
dzm name+1
```

```
1: dac name+2
  dzm name+3
  lac d6
```

```
11  dac rator
10  jms lookup
    dzm savchr
    jmp i gsyms
```

```
7  tlookup: 0
```

```
6    jmp 1f
```

```
5  lookup: 0
```

```
4    dzm tlookup
```

```
3  1:
```

```
-1
tad namlstp
dac 8
lac namsiz
dac namc
```

```
lu1:
lac i 8
sad name
jmp 1f
lac d5
```

```
lu2:
tad 8
dac 8
isz namc
jmp lu1
```

```
lac tlookup
sna
jmp 2f
lac fnamep
dac rand+1
jmp i tlookup
```

```
2:
lac name
dac i 8
lac 8
dac rand+1
lac name+1
dac i 8
lac name+2
dac i 8
lac name+3
dac i 8
lac d3
dac i 8
dzm i 8
-1
tad namsiz
dac namsiz
jmp i lookup
```

not a label

extra new

```
1:
lac i 8
sad name+1
jmp 1f
lac d4
jmp lu2
```

```
1:
lac i 8
sad name+2
jmp 1f
lac d3
jmp lu2
```

```
1:
lac i 8
sad name+3
jmp 1f
lac d2
jmp lu2
```

```
1:
-3
tad 8
dac rand+1
```

```
lac tlookup
sza
jmp i tlookup
```

```
jmp i lookup
namep: name
```

```
gpair: 0
jms gsymb
lac rator
sad d4
jmp gpair+1
jms betwen; d1; d6
jmp gp1
dzm rand
dzm rand+1
jmp i gpair
```

```
gp1:
sad d7
lac d4
tad dm4
dac rand
jms gsymb
lac rator
sad d4
jmp gp2
jms betwen; d1; d6
skp
jmp i gpair
jms error; x>
jmp skip
```

```
gp2:
jms gchar
jms betwen; d5; d8
jmp gp3
lac char
dac savchr
jmp i gpair
```

```
gp3:
lac char
dac savchr
jms gsymb
jmp i gpair
```

```
expr: 0
jms grand
-1
dac sranc
```

```
exp5:
lac rand
dac r
lac rand+1
dac r+1
```

```
exp1:
lac rator
jms betwen; d1; d5
jmp exp3
dac orator
jms gpair
jms grand
lac orator
sad d4
```

```
jmp exp2
jms oper; fand
jmp exp1
```

```
exp2:
jms pickup
lac r
dac srand
lac r+1
dac srand+1
jmp expb
```

```
exp3:
sad d5
jmp exp4
jms error; x>
jmp skip
```

```
exp4:
jms pickup
jmp i expr
```

```
pickup: 0
lac srand
spa
jmp i pickup
lac d4
jms oper; srand
jmp i pickup
```

```
grand: 0
lac rand
sad d2
skp
jmp i grand
lac rand+1
tad d4
dac rand+1
lac i rand+1
dac rand
isz rand+1
lac i rand+1
dac rand+1
jmp i grand
```

```
oper: 0
tad opsw
dac oper1
-1
tad i oper
dac 8
isz oper
lac r
sad d3
jmp oper2
lac i 8
sad d3
jmp oper2
```

```
oper1:
jmp 0
```

```
opsw:
jmp -1
jmp oplus
jmp ominus
```

```

tad r
dac r
lac r+1
lmq
lac i 8
omq
jmp oret
oplus:
tad r
dac r
lac r+1
tad i 8
jmp oret
ominus:
cma
tad d1
tad r
dac r
-1
tad i 8
cma
tad r+1
oret:
dac r+1
lac r
jms betwen; dm1; d2
skp
jmp i oper
jms error; r>
lac d1
dac r
jmp i oper
oper2:
dac r
dzm r+1
jmp i oper

```

```

d0: 0
d1: 1
d4096: 4096
d2: 2
d3: 3
d4: 4
d5: 5
d6: 6
d7: 7
d8: 8
o12: d10: 10
dm1: -1
o40: 040
o60: 060
dm48: -48
o400000: 0400000
o177: 0177
dm4: -4
o200: 0200
o42: 042
o142: 0142
o40040: 040040
o56056: 056056
o56040: 056040

```

o146: 0146
o17777: 017777
o1000: 1000
o17: 017
o17700: 017700
o77: 077
o74: 074
o76: 076

namsiz: -2
namlstp: namlst
fnamep: fakename
lactab: lac ,+1
8;8;8;8;8;8;8;8;8
8;4;5;8;8;8;8;8;8
8;8;8;8;8;8;8;8;8
8;8;8;8;8;8;8;8;8
4;8;8;8;8;8;8;8;8
8;8;6;2;4;3;6;8
7;7;7;7;7;7;7;7;7
7;7;0;5;8;1;6;8
8;6;6;6;6;6;6;6;6
6;6;6;6;6;6;6;6;6
6;6;6;6;6;6;6;6;6
6;6;6;8;8;8;8;8;8
8;6;6;6;6;6;6;6;6
6;6;6;6;6;6;6;6;6
6;6;6;6;6;6;6;6;6
6;6;6;8;8;8;8;8;8

fbflg: ., +1
tal: ., +1
talc: ., +1
tal1: ., +1
tal1c: ., +1
narg: ., +1
lvrand: ., +1
eofflg: ., +1
namc: ., +1
passno: ., +1
char: ., +1
savchr: ., +1
comflg: ., +1
rator: ., +1
orator: ., +1
rand: ., +2
srand: ., +2
r: ., +2
name: ., +4
buf: ., +64
jobuf: ., +64
fbx: ., +10
mes: ., +20
iof: ., +1
bfi: ., +1
bfo: ., +1
lineno: ., +1

fakename: ., +6
namlst:
. , +4

dot:
.,+6
cmfix:

11
10
9
7
6
5
4
3