

" cas

narg = i 017777

lac 017777
tad d5
dac name1
tad d4
dac name2
lac narg

sad d4
jmp 1f
sad d8
jmp 2f
jmp 3f

1:

law ttyout
dac name1

2:

law ttyin
dac name2

3:

sys open; name2: 0; 0
sra
jmp 1f
lac name2
dac 2f
lac d1

sys write; 2: 0; 4
lac d1
sys write; mes; 2
sys exit

1:

sys open; name1: 0; 1
sra
jmp 1f
lac name1
dac 2f
lac o17
sys creat; 2: 0

sra
jmp 1f
lac name1
dac 2f
lac d1
sys write; 2: 0; 4

lac d1
sys write; mes; 2
sys exit

mes:

040077;012

1:

dzm nchar
dzm x
dzm y
dzm parflg
dzm nins
dzm nwds
lac bufp
dac 10

advanc:

```
lac nchar
dzm nchar
sza
jmp adv1
lac d2
sys read; char; 1
sna
jmp done
lac char
and o777
dac nchar
lac char
lrss 9
```

adv1:

```
sna
jmp advanc
dac char
lac labflg
sna
jmp 2f
lac char
sad o12
skp
jmp 1f
dzm labflg
dac i 11
jmp advanc
```

1:

```
dac i 11
jmp advanc
```

2:

```
lac parflg
sza
jmp atoz
lac char
sad o12
jmp advanc
sad o72
```

```
skp
jmp 1f
-4
dac labflg
dac mod3
jrs wbuf
lac lbufp
dac 11
lac o170072
dac i 10
lac o12
dac i 10
```

```
lac o60
dac i 10
isz nwds
isz nwds
isz nwds
jmp advanc
```

1:

```
sad o170
skp
jmp 1f
```

dzm vis
jmp advanc

1:

sad o166
skp
jmp 1f
lac visbit
dac vis
jmp advanc

1:

sad o162
skp
jmp letr
isz mod3
skp

jmp 2f
lac o60060

1:

dac i 10
isz nwds
isz mod3
jmp 1b

2:

lac o12
dac i 10
isz nwds
lac lbuff
dac 11

1:
lac i 11
sad o12
jmp 1f
dac i 10

isz nwds
jmp 1b

1:

lac o75170
dac i 10
isz nwds

lac ob1
dac i 10
isz nwds
lac sp
dac i 10
isz nwds

lac nins
dzm nins
tad o100
lmq
llss 10
cla

llss 3
alss 6
llss 3
tad o60060
dac i 10
cla

llss 3
alss 6
llss 3
tad o60060

```
    dac i 10
    cla
    llss 3
    alss 6
    llss 3
    tad o60060
    dac i 10
    lac nwds
    tad d4
    dac nwds
    lac o12012
    dac i 10
    dzm x
    dzm y
    jmp advanc
```

letr:

```
    tad om141
    spa
    jmp error
    tad dm16
    sna
    jmp error
    cra
    tad dm3
    dac ny
    -1
    dac parflg
    jmp advanc
```

atoz:

```
    lac char
    tad om141
    spa
    jmp error
    tad dm14
    sna
    jmp error
    tad d14
    dac nx
```

loop:

```
    -1
    tad x
    cra
    tad nx
    dac delx
    -1
    tad y
    cra
    tad ny
    dac dely
    " generate direction
```

```
11
10    lac delx
9     sna
8     jmp c1
7     spa
6     jmp c2
5     lac dely ;"dx .gr. 0
4     sna
3     jmp c3
```

```

spa
jmp c4
lac d1
c3: jmp b
lac d2
jmp a
c4: lac d3
jmp b

c1:
lac dely
sna
jmp out
spa
jmp c5
cla
jmp a
c5: lac d4
jmp a
c2: lac dely
sna
jmp c6
spa
jmp c7
lac d7
jmp b
c6: lac d6
jmp a
c7: lac d5
jmp b
"
"
a: dac direc
lac delx
sna
jmp 1f
cma
tad d1
dac delx
1: lac dely
sna
jmp 1f
cra
tad d1
1: tad delx
tad dm4
sna
cla
tad d3
dac dist
tad incxp
dac trp

```

```
lac i tmp
dac incx
lac dist
tad incyf
dac tmp
lac i tmp
dac incy
jmp cor
"
```

b:

```
dzm dist
dac direc
lac incxt
dac incx
lac incyt
dac incy
"
```

com:

```
isz nins
lac dist
alss 4
xor vis
xor direc
isz mod3
skp
jmp 1f
```

2:

```
lmg
llss 12
cla
llss 3
alss 6
llss 3
tad o60060
dac i 10
isz nwds
jmp 3f
```

1:

```
dac tmp
lac o12060
dac i 10
isz nwds
-3
dac mod3
lac tmp
jmp 2b
```

3:

```
lac direc
tad incx
dac tmp
lac i tmp
tad x
dac x
lac direc
tad incy
dac tmp
lac i tmp
tad y
dac y
jmp loop
```

```
out:
  lac nx
  dac x
  lac ny
  dac y
  dzm parflg
  jmp advanc
```

```
done:
  lac d2
  sys close
  jms wbuf
  lac d3
  sys close
  sys exit
```

```
error:
  lac d1
  sys write; char; 1
  lac d1
  sys write; mes; 2
  dzm parflg
  dzm labflg
  jmp advanc
```

```
wbuf: 0
  lac nwds
  dac 1f
  lac d3
  sys write; buf; 1f; 0;
  dzm nwds
  lac buff
  dac 10
  jmp i wbuf
```

```
d1: 1
d2: 2
d3: 3
d4: 4
d5: 5
d6: 6
d7: 7
d8: 8
o12: 012
o75170: 075170
ob1: 055142
```

```
sp: 053060
o60: 060
o60060: 060060
o73: 073
d6: 6
d14: 14
dm14: -14
dm16: -16
om141: -0141
dm3: -3
dm4: -4
o162: 0162
o166: 0166
```

o17: 017
o777: 0777
o72: 072

o170: 0170
o10000: 010000
o20000: 020000
o200000: 0200000
o41: 041

ttyin:

0164164;0171151;0156040;040040

ttyout:

0164164;0171157;0165164;040040

char: ,=,+1
parflg: ,=,+1
labflg: ,=,+1
obuf: ,=,+8
x: ,=,+1
y: ,=,+1
nx: ,=,+1
ny: ,=,+1
vis: ,=,+1
nchar: ,=,+1

incxp:incxt
incyp:incyt
incxt: x1;x2;x3;x4
incyt: y1;y2;y3;y4

x1: 0;1;1;1;0;-1;-1;-1
x2: 0;2;2;2;0;-2;-2;-2
x3: 0;3;3;3;0;-3;-3;-3
x4: 0;4;4;4;0;-4;-4;-4
y1: 1;1;0;-1;-1;-1;0;1
y2: 2;2;0;-2;-2;-2;0;2
y3: 3;3;0;-3;-3;-3;0;3
y4: 4;4;0;-4;-4;-4;0;4

delx: ,=,+1
dely: ,=,+1
incx: ,=,+1
incy: ,=,+1
direc: ,=,+1
dist: ,=,+1
visbit: 010
mod3: ,=,+1

tmp: ,=,+1
buf: ,=,+500
bufp: buf-1
lbuf: ,=,+10
lbufp: lbuf-1
nwds: ,=,+1

o170072: 0170072

nins: ,=,+1
o100: 0100
o12012: 012012
o12060: 012060

:ca
v
af
nl

x
hd
v
hi
x
mn
r

:cb

x
ga
v

gi
ik
kk
mi
ma
aa
ai
ck
ek
gi
x
mn
r

:cc

x
kk
v
mi
mc
ka
ca
ac
ai
dl
x
mn
r

:cd

v
aa
ai
ck
kk
mi
ma
x
mn
r

:ce

x
mk
v
ma

11

10

7

6

5

4

3

aa
ak
x
gh
v
ga
x
mn
r

:cf
v
aa
ak
x
gh
v
ga
x
mn
r

:cg
x
gf
v
gk
nk
x
kk
v
mi
mc
ka
ca
ac
ai
di
x
mn
r

:ch
x
aa
v
na
x
gb
v
gk
x
ak
v
nk
x
mn
r

:ci
x

11
10
7
6
5
4
3

md
v
ml
x
lf
v
af
x
ad
v
ai
x
mn
r

:cj
x
ka
v
mc
mg
ki
ai
x
ag
v
ai
x
mn
r

:ck
x
aa
v
na
x
ak
v
ia
x
mk
v
fe
x
mn
r

:cl
x
aa
v
ma
mk
x
mn
r

:cn
v
aa

11
10
7
6
5
4
3

hf
ak
nk
x
mn
r

:cn
x
ak
v
mk
aa
na
x
mn
r

:co
x
ai
v
ch
ei
ck
ai
ac
ca
ka
mc
mi
kk
ck
x
mn
r

:cp
v
aa
ai
ck
ek
qi
qa
x
mn
r

:cq
x
mc
v
ka
ca
ac
ai
ck
kk
mi
mc

11
10
9
8
7
6
5
4
3

x
jh
v
nl
x
mn
r

:cr

v
aa
ai
ck
ek
gi

ga
x
mk
v
gf
x

mn
r

:cs

x
ka
v
mc
mi
kk
ik
gi

gc
ea
ca
ac
ai
dl

x
mn
r

:ct

x
aa
v
al
x
mf
v

af
x
mn
r

:cu

x
aa
v
ka

mc
mi
kk

x
ak
v
lk
x
mn

r

:cv

x
aa
v

mf

x
ak
v
mf
x

mn

r

:cw

x
aa
v

mc

af
x
ak
v

mi

af
x
mn
r

:cx

v
gf
x
ak
v

gf

x
aa
v
nl
x

mn

r

:cy

x

aa

v

if

x
ak

11

10

7

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v
if
nf

x
mn
r

:cz

x

aa

v

ak

ma

ml

x

mn

r

:c0

x

ck

v

ai

ac

ca

ka

mc

mi

kk

ck

x

mn

r

:c1

x

ce

v

af

mf

x

md

v

mi

x

mn

r

:c2

x

ca

v

ac

ai

ck

ek

gi

gc

ia

na

mi

11

12

7

6

5

4

3

mc
mi
kk
hk
fi
fc
ha
x
mn
r

:c7

x
aa
v
ak
nb
x
mn
r

:c8

x
gc
v
ea
ca
ac
ai
ck
ek
gi
gc
ia
ka
mc
mi
kk
ik
gi
x
mn
r

:c9

x
ka
v
mc
mi
kk
ck
ai
ac
ca
fa
hc
hi
fk
x
mn

x
mn
r

:c3
x
aa
v
ak
fe
fl
hk
kk
mi
mc

x
ka
v
nd
x
mn
r

:c4
x
mh
v
ah
ia
il
x
mn
r

:c5
x
ak
v
aa
fa
fi
hk
kk
mi
mc
x
ka
v
nd
x
mn
r

:c6
x
ck
v
ai
ac
ca
ka