# newschool amiga demos

winden of network - bcnparty 101

# intro

- newschool
  - almost pure cpu effects
  - minimal custom chip usage
- coding oriented talk
  - but also some graphics and sound info

# ¿amiga? - 1

- fixed hardware since 10 years

- demos run on bare hardware

  - the only code running is yours

- lots of documentation and tutorials

- small but active scene community

# machine specs

- 50 mhz cpu, 1 million cycles per frame

- 32 megs "fast" ram

- 80 kb per frame upload to gfxram

- separate 8 kb code + 8 kb data caches

# sound

- low cpu usage:            4 channel sound

- medium cpu usage:       8 channel sound

- high cpu:                    streaming adpcm

- simply use public routines at first

# screen modes

- palette based, upto 256 colors

- ham based, 18bit truecolor

    - HQ RGBB pixel quads

    - LQ, alternating RG/BG pixel pairs

        - better speed

        - drawing routine is more complex

# screen modes II

- palette 320x256:           80 kb per frame

- truecolor 320x256 HQ:   320 kb per frame

- truecolor 320x256 LQ:    160 kb per frame

# chunky to planar

- newschool routines need chunky image

- display hardware needs planar image

- howto: read from chunky, convert in registers, write to planar in vram

- complex, time-criticial operation

- simply use off-the-shelf routines

# cpu

- motorola 68060, last in 680x0 series

- 1 cycle per instr... but pairing make it 0,5

- 16 integer regs, 8 float regs

- 8k inst cache, can fit complete effects inside

- 8k data cache, same speed as a register

- branch cache, looping takes 0 cycles

# design guides

- hide code limitations via design

- don't forget logos, wipes...

- use palette tricks to accelerate effects

  - forces graphics to use less colors

- talk a lot with your graphician

- tight sync the demo with the music