

# Софтроутинг. Новые горизонты.

Вадим Алимов

Maximum-Net LLC

# Processors

- ASIC – Application Specific Integrated Circuit
- SoC – System on a chip

VS

- Traditional **x86** and **amd64** CPUs

# Is it reliable?

HP ProLiant DL360p G8 (646904-421)



# Functional is almost infinite

- Firewall
- Routing daemons
- Tcpdump (not just netflow)
- IPv6, v7, v8
- DDoS – growing monster
- Any type of pro-active daemon
- Fake packets – elegant service

# Performance

- 2xIntel E5-2650
- Infinite\* RAM
- Infinite\* log/config storage (SSD)
- 250W of power
  - » 1.3 mpps
  - » over 8 Gbps
  - » Great affinity on 16 physical cores

File Edit View Terminal Help

```

Last pid: 89862; load averages: 18.96, 9.71, 4.25
325 processes: 68 running, 179 sleeping, 8 zombie, 70 waiting
CPU 0: 24.8% user, 0.0% nice, 30.8% system, 0.0% interrupt, 44.4% idle
CPU 1: 3.7% user, 0.0% nice, 23.1% system, 0.0% interrupt, 73.1% idle
CPU 2: 4.5% user, 0.0% nice, 31.3% system, 0.0% interrupt, 64.2% idle
CPU 3: 5.3% user, 0.0% nice, 44.4% system, 0.0% interrupt, 50.4% idle
CPU 4: 0.7% user, 0.0% nice, 30.6% system, 0.0% interrupt, 68.7% idle
CPU 5: 3.0% user, 0.0% nice, 25.4% system, 0.0% interrupt, 71.6% idle
CPU 6: 0.8% user, 0.0% nice, 26.3% system, 0.8% interrupt, 72.2% idle
CPU 7: 3.0% user, 0.0% nice, 27.6% system, 0.0% interrupt, 69.4% idle
CPU 8: 6.7% user, 0.0% nice, 23.9% system, 0.0% interrupt, 69.4% idle
CPU 9: 0.7% user, 0.0% nice, 24.6% system, 0.0% interrupt, 74.6% idle
CPU 10: 6.0% user, 0.0% nice, 24.8% system, 0.0% interrupt, 69.2% idle
CPU 11: 1.5% user, 0.0% nice, 19.4% system, 0.0% interrupt, 79.1% idle
CPU 12: 0.0% user, 0.0% nice, 24.1% system, 0.8% interrupt, 75.2% idle
CPU 13: 3.8% user, 0.0% nice, 19.5% system, 0.0% interrupt, 76.7% idle
CPU 14: 9.0% user, 0.0% nice, 20.1% system, 0.0% interrupt, 70.9% idle
CPU 15: 5.2% user, 0.0% nice, 22.4% system, 0.0% interrupt, 72.4% idle
CPU 16: 28.6% user, 0.0% nice, 26.3% system, 0.0% interrupt, 45.1% idle
CPU 17: 3.8% user, 0.0% nice, 24.1% system, 0.0% interrupt, 72.2% idle
CPU 18: 3.0% user, 0.0% nice, 26.9% system, 0.0% interrupt, 70.1% idle
CPU 19: 5.3% user, 0.0% nice, 23.3% system, 0.0% interrupt, 71.4% idle
CPU 20: 5.2% user, 0.0% nice, 23.9% system, 0.0% interrupt, 70.9% idle
CPU 21: 4.5% user, 0.0% nice, 26.9% system, 0.0% interrupt, 68.7% idle
CPU 22: 6.0% user, 0.0% nice, 24.1% system, 0.0% interrupt, 69.9% idle
CPU 23: 6.8% user, 0.0% nice, 21.1% system, 0.0% interrupt, 72.2% idle
CPU 24: 11.9% user, 0.0% nice, 18.7% system, 0.0% interrupt, 69.4% idle
CPU 25: 4.5% user, 0.0% nice, 18.7% system, 0.0% interrupt, 76.9% idle
CPU 26: 3.7% user, 0.0% nice, 20.1% system, 0.0% interrupt, 76.1% idle
CPU 27: 4.5% user, 0.0% nice, 20.1% system, 0.0% interrupt, 75.4% idle
CPU 28: 6.8% user, 0.0% nice, 18.8% system, 0.0% interrupt, 74.4% idle
CPU 29: 3.7% user, 0.0% nice, 17.9% system, 0.0% interrupt, 78.4% idle
CPU 30: 5.2% user, 0.0% nice, 25.4% system, 0.0% interrupt, 69.4% idle
CPU 31: 33.6% user, 0.0% nice, 9.7% system, 0.0% interrupt, 56.7% idle
Mem: 73M Active, 489M Inact, 849M Wired, 196K Cache, 826M Buf, 6452M Free
Swap: 8192M Total, 8192M Free

```

| PID | USERNAME | PRI | NICE | SIZE | RES  | STATE | C  | TIME  | WCPU   | COMMAND       |
|-----|----------|-----|------|------|------|-------|----|-------|--------|---------------|
| 11  | root     | 171 | ki31 | OK   | 512K | RUN   | 25 | 17:00 | 77.49% | {idle: cpu25} |
| 11  | root     | 171 | ki31 | OK   | 512K | RUN   | 3  | 16:46 | 76.37% | {idle: cpu3}  |

# Real experience

- 3 times cheaper
- 10G border+shaper+policer+firewall

**In a single box!**

Q?