SBC-OS

the result of 20 years of experience

By Alexandr Dubovikov

Why do we need a Session Border Controller (SBC)?

- Deep packet inspection (DPI) to ensure that only properly formatted SIP messages enter an enterprise's network. No Scanners, DDOS, etc.
- Network Address Translation (NAT) transversal. SIP/RTP
- SIP manipulation
- SIP Trunking / Routing
- SIP troubleshooting / Recording
- RTP Payload Transcoding G.729/G.711
- SIP TLS / SRTP
- WebRTC to SIP
- QOS

Popular Commercial SBCs

- Huawei
- ACME Packet / Oracle
- Sonus
- ABC SBC

Risks of Closed-Source SBCs

- Black Box Model
- Expensive Support
- No Access to Developers
- Can’t fix it yourself

Is OpenSource a Cancer ?

- *Microsoft, Steve Ballmer and GitHUB*
- *Linux and Windows 10*
- *Can be an alternative to “paid” solutions ?*
- *Don’t cry for me Argentina!*

“Every man should plant a tree, build a house and raise a son.”

Talmud (sotah 44)

“Every computer geek should build their own HTPC, hack a computer and write an own operating system.”

Alexandr the Dubovikov (KW 19)


What's In
The Box?

SBC-OS

Kamailio

+ RTPEngine

+ HEP Tools

+ Telegraf

+ Monit

+ LI-Agent

SBC-OS: Base Image

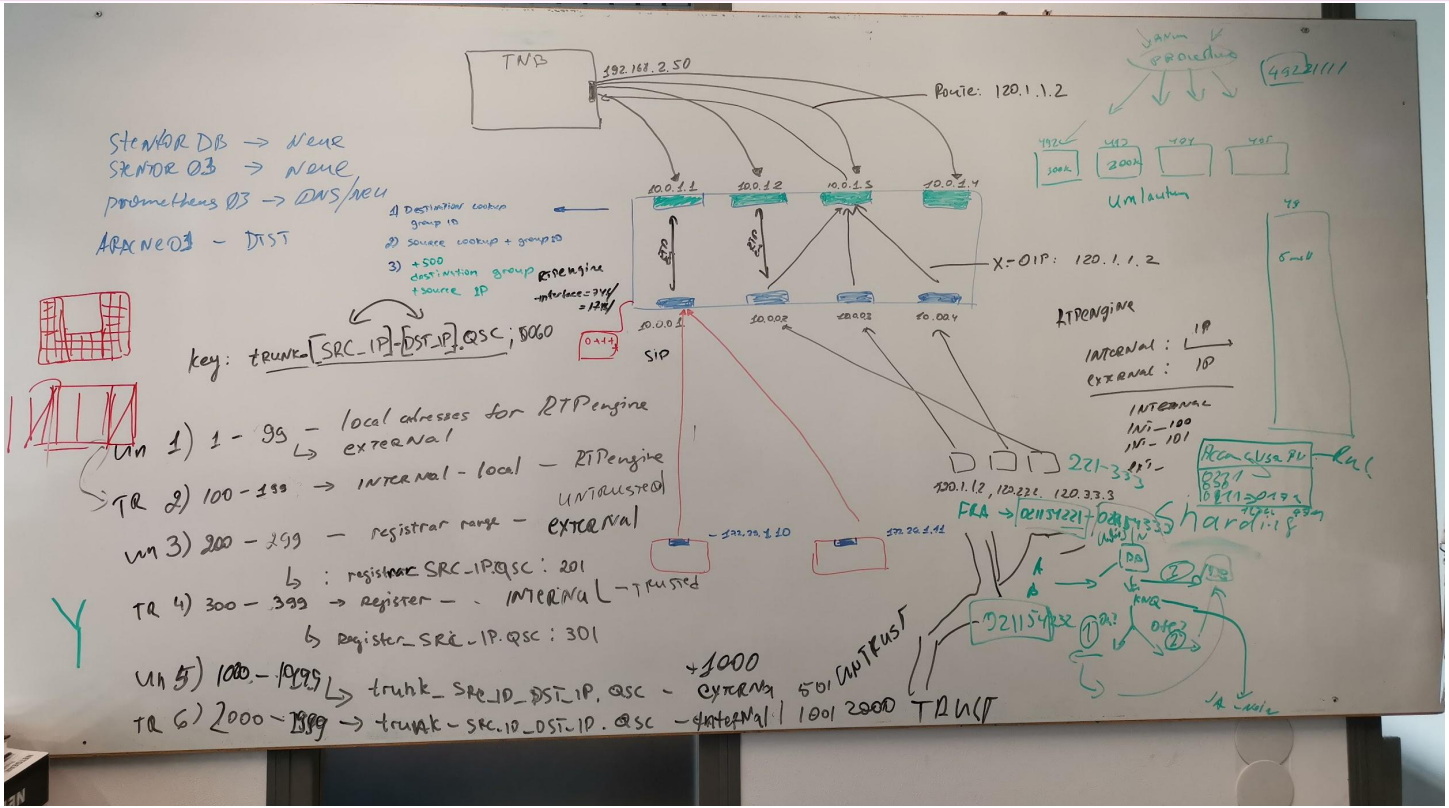
1. *InitRamfs, RootFS*
2. *50 Mb Image*
3. *Linux Kernel 4.19.x*
4. *Kamailio, RTP:Engine, Telegraf*
5. *It can boot rootFS or from usb/cdrom or from network (PXE or HTTP mount)*

SBC-OS: Core Features

1. *NAT fix including NAT ping*
2. *SIP analyze and normalizing*
3. *PIKE - limits*
4. *Topology hiding*
5. *Header manipulation*
6. *SIP TLS -> SIP*
7. *RTP Relay (kernel space) including QOS*
8. *RTP transcoding, RTP Recording*
9. *SRTP->RTP and vice-versa*
10. *Lawful Interception*
11. *Monitoring and statistics including RTP Mos/Qos*
12. *Full IPv4 IPv6 support.*

Our stormbraining :-)

Hard to call it brainstorming



LAWFUL INTERCEPTION in partnership with QXIP BV

- *LI-Agent* — *software probes for physical and virtual interception*
- *Utimaco / G2K* — *certified with LEA mediation partners worldwide*
- *BNetzA* — *certified to comply with latest German regulations*

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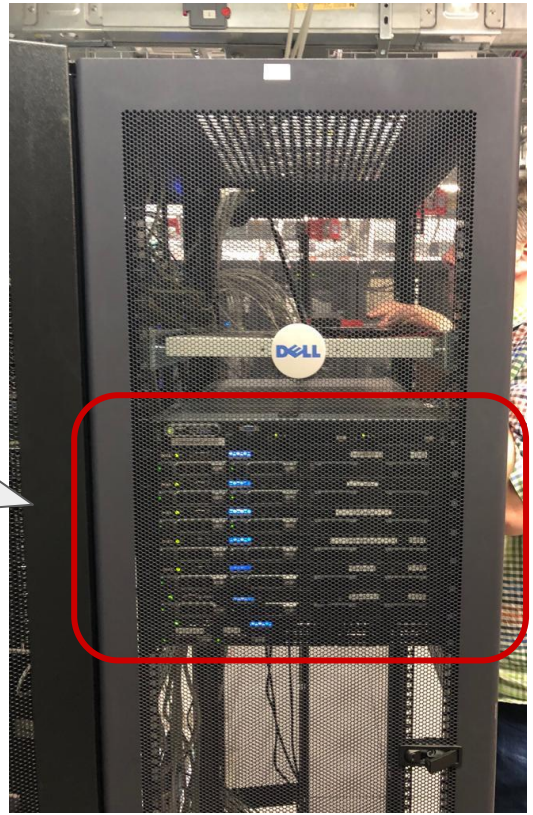
HOMER and Monitoring

- *Native Mirroring* — *Built-In Native HEP Support*
- *HEPAgent w/ RTP Support* — *RTP/RTCP Analysis and MOS*
- *Events and Syslog -> LOKI* — *Correlated Log Streaming*
- *STATS -> Telegraf -> Anywhere* — *Correlated Timeseries emission*
- *Homer 7 + User Interface* — *Plug-and-Play visibility*

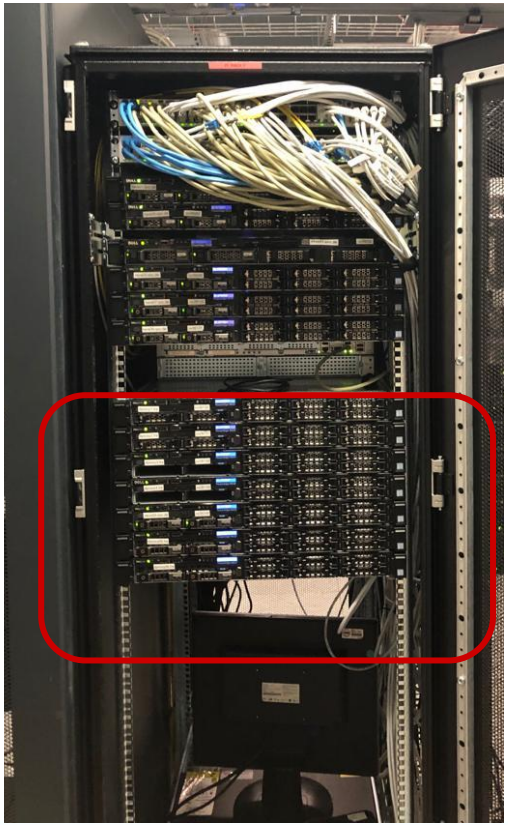
SBC-OS Benefits @PlusNET

- IPXE bootstrap
- Auto Scaling
- Remote Provisioning
- No HDD
- Open-Source

How it looks now



Trunking Cluster

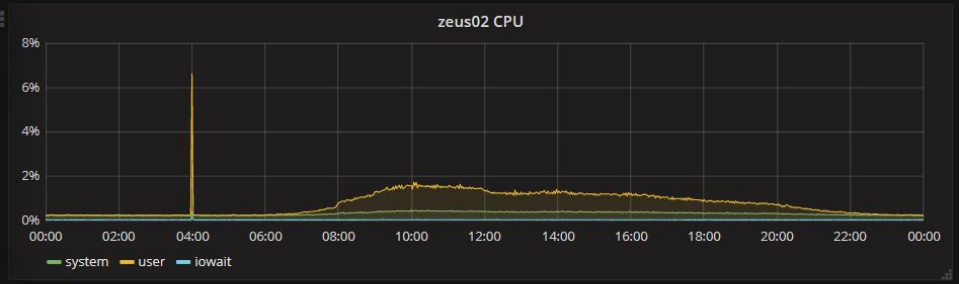


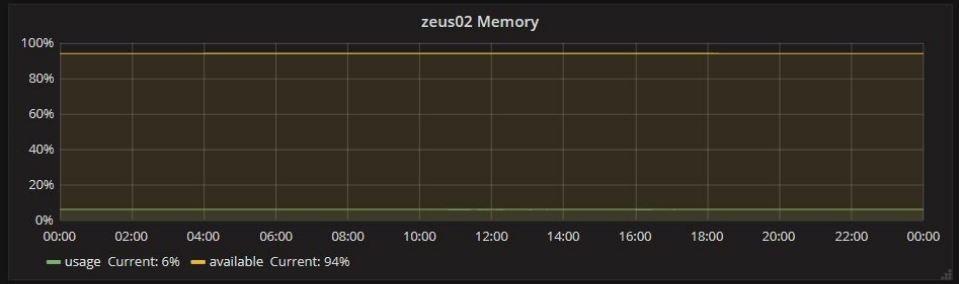
Carriers Interconnect

Real World Benchmarks

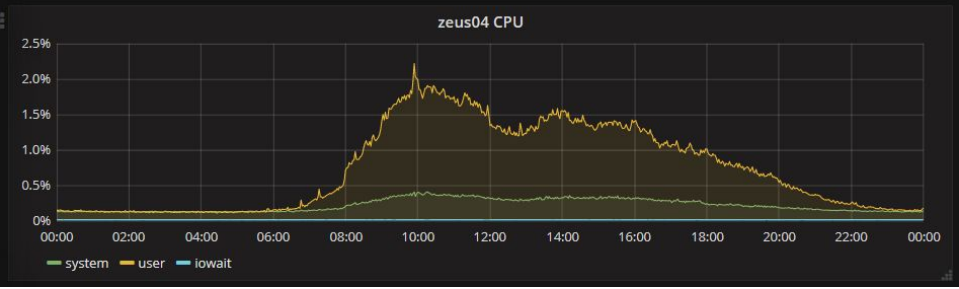
1. *20K CC / 50K registrations*
2. *SIP interconnections = 30M minutes daily*
3. *Keep alive nat ping even in real complex scenarios*
4. *No dialogs - stateless - very fast*
5. *Works with proprietary trunks and not only opensource projects. Confirmed during real bet!*
6. *New servers can be deployed in < 3 minutes - very good scale*

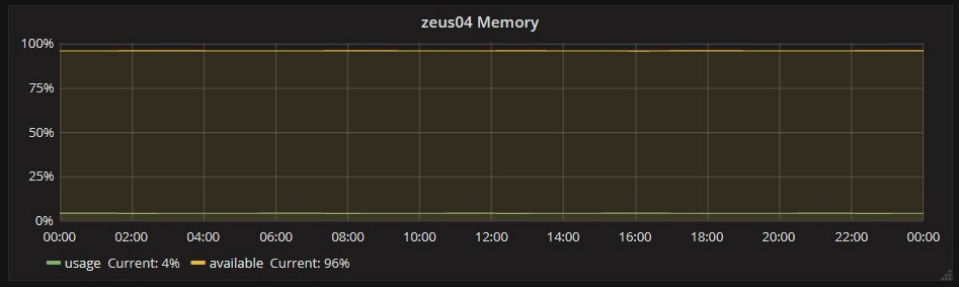
Zeus 02





Zeus 04





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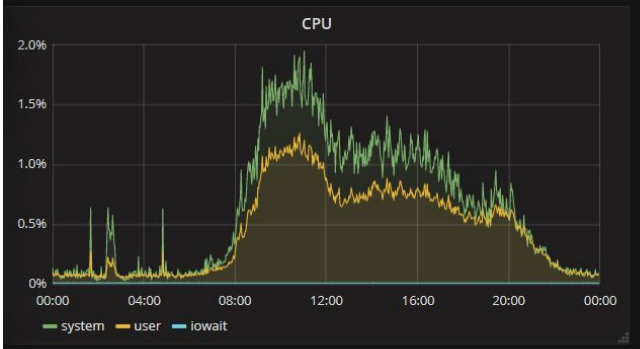

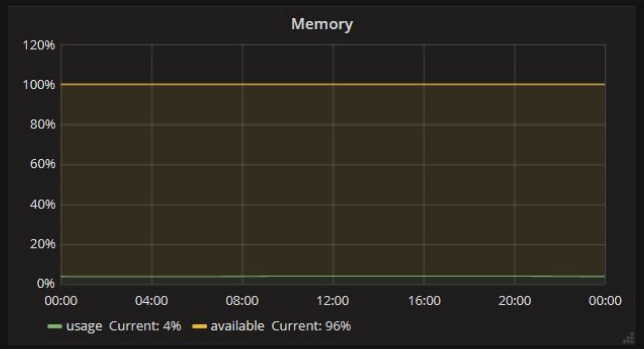

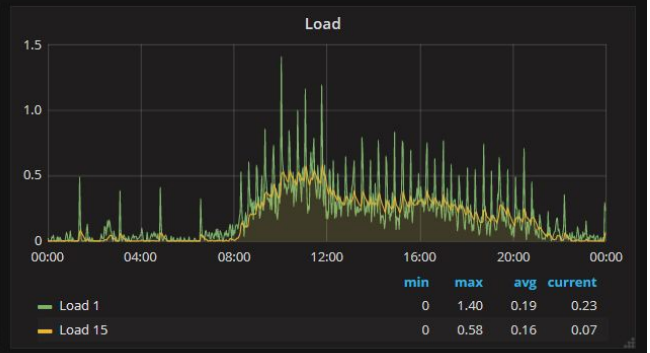

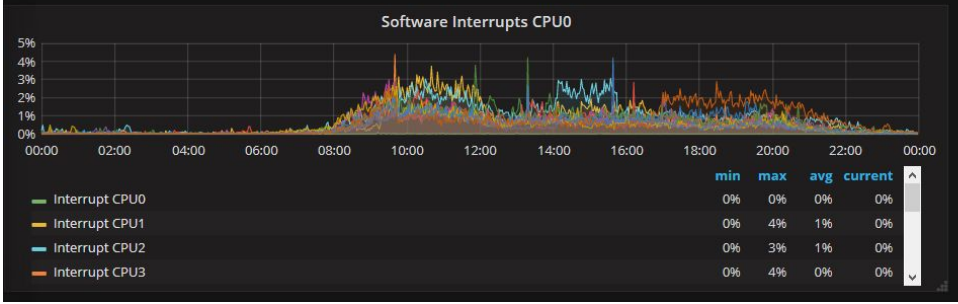

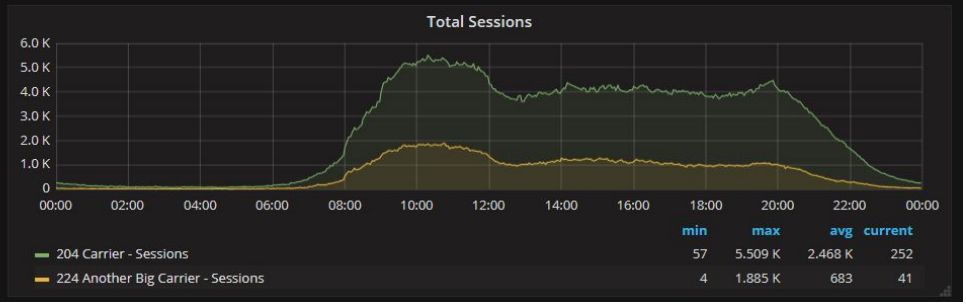

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SBC-OS: How to configure / Should I know kamailio ?

- *Coming Soon!* ***SBC-CLI.***

  SBC-CLI is a command line configuration tool for SBC-OS

  - Trunk Configuration
  - Firewall
  - QOS
  - Monitoring

SBC-OS: How I can try it?

- *SBC-OS ProtoType project on github*
  - *http://github.com/adubovikov/sbcOS*
    Debian 9 / Ubuntu 18
- *Changes / RW/RO scenarios*
- *Demo*

SBC-OS: Road Map

- *SBC-CLI Configuration*
- *WebUI Configuration*
- *Shared Configuration Examples (community)*
- *Public version real tests and feedbacks*

Questions?