Present and Future

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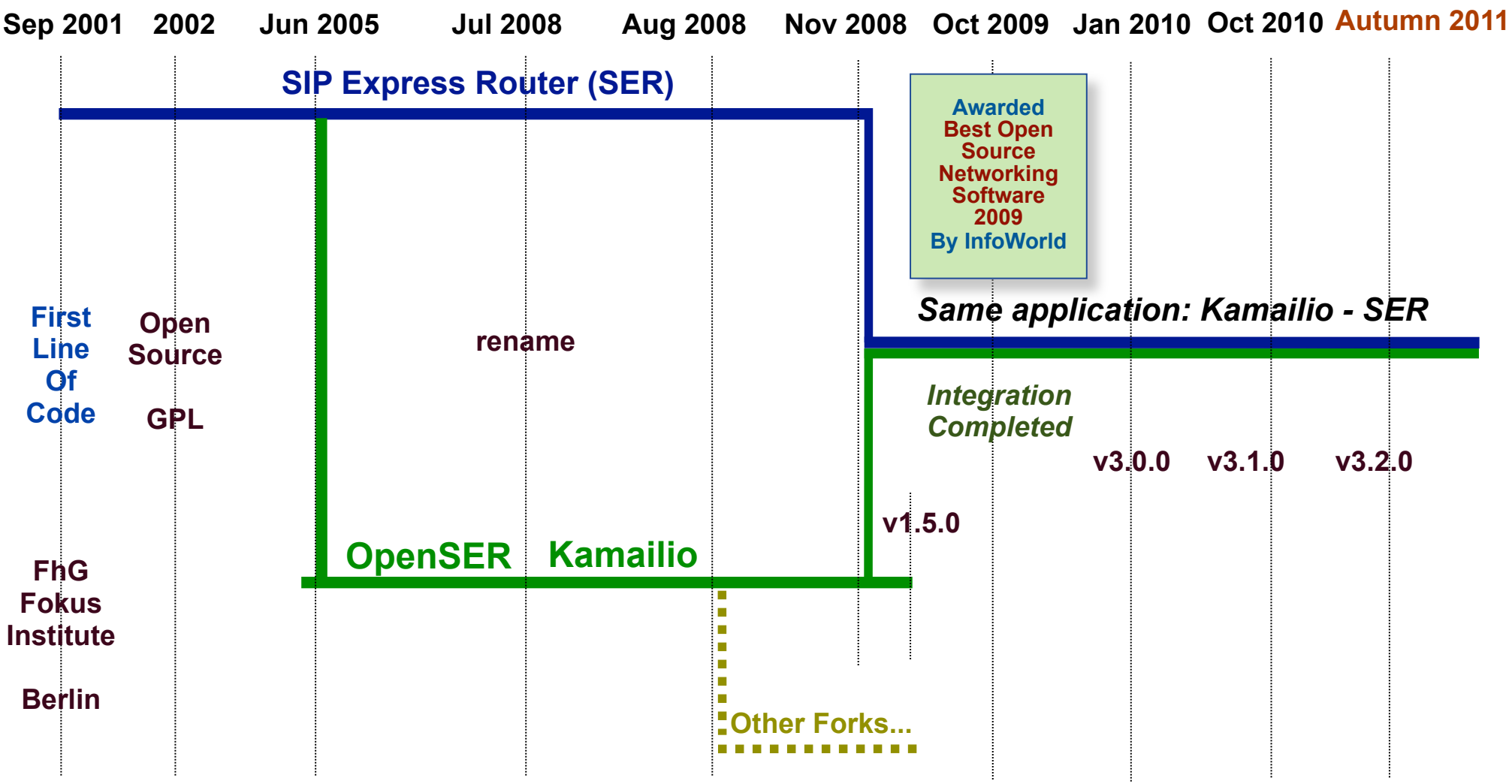
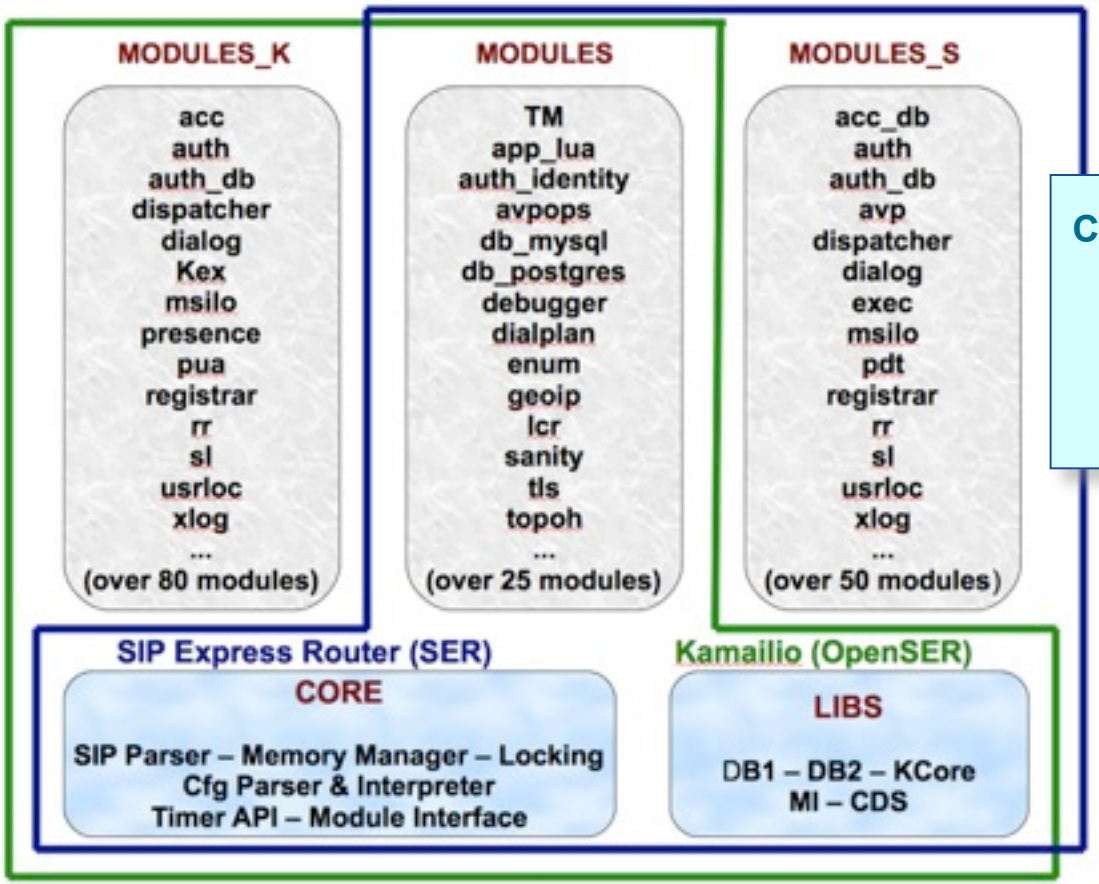
http://www.asipto.com

A bit of history - 10 years SER



3.x Releases: One application, Two names



Constrained mainly by database schema

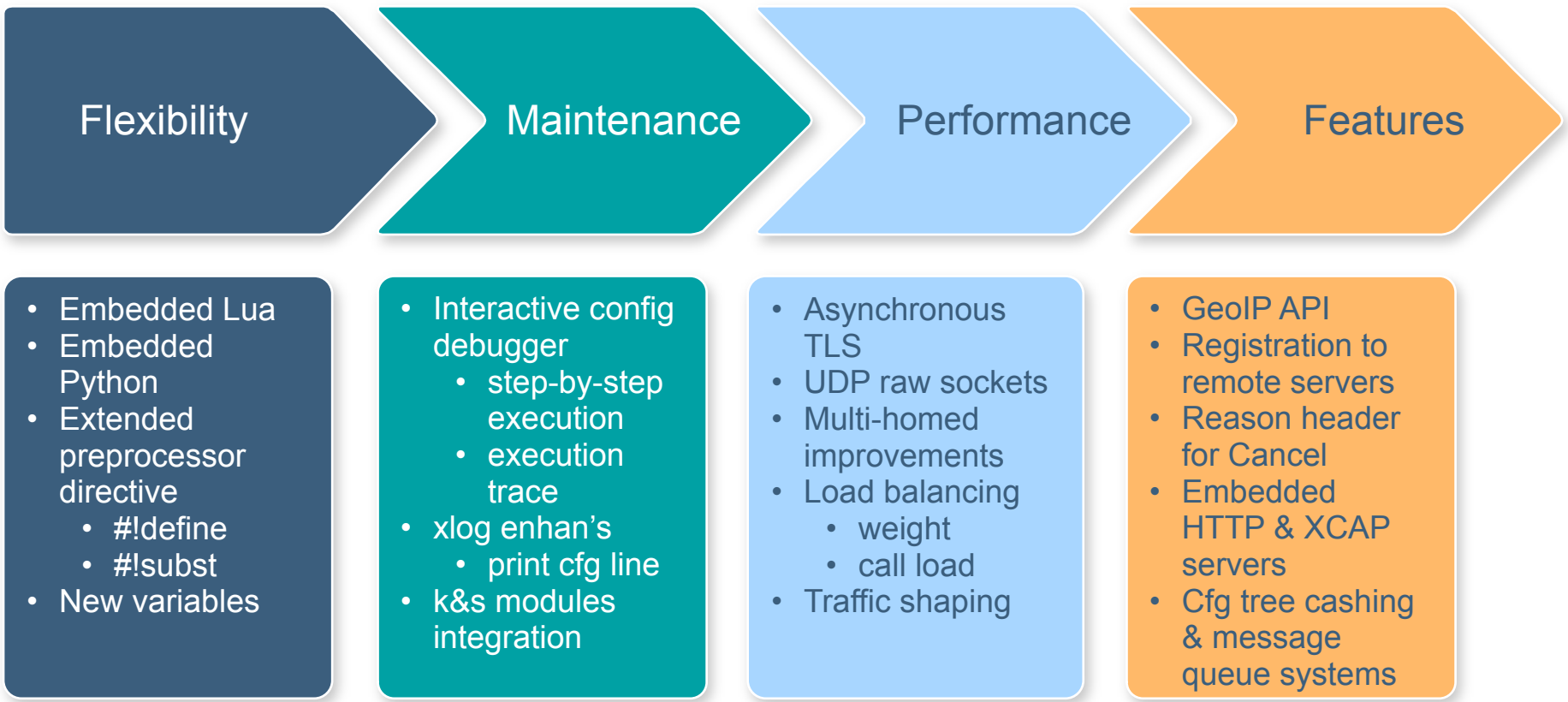
- during 2005 - 2008, SER and Kamailio developed different database structure to store user profiles and routing data
- strong dependency on administration and auto-provisioning systems

Example

- subscriber: username, password, DID, ACL, a.s.o.
- *Kamailio - table with many columns (one attribute in a dedicated column)*
- *SER: table with many rows of (attribute name, attribute value)*

Many duplicated modules were merged meanwhile

New in 3.1.0



http://www.kamailio.org/w/kamailio-openser-v3.1.0-release-notes/

State of the project

- Internal architecture refactored for v3.0.0
  - support asynchronous processing
    - TCP and TLS
    - SIP request handling
  - transaction management
  - internal libraries

Right now

- very stable core and main components
- ➡ toped with our well known scalability and flexibility
- safe framework for future development
- ➡ your work (extensions and deployments) is safe from now on for many years - there is no need to change the architecture again
- focus is on new features
- ➡ 3.2.0 (and the next slides) shows that

Scalability (info from public domain)

- services with millions of active subscribers
- ➡ 1&1 Germany (> 3M)
- services routing billions of call minutes per month
- ➡ might be the guy next to you (or pay attention tomorrow)

New in 3.2.0

Many native extensions to Lua

cfg routing logic all in Lua

Distributed Message Queue

Using SIP and Peer-to-Peer

SQLite connector

use file based database for embedded systems

Partitioned user location service

many nodes sharing location data

Redis No-SQL

connector from config

New in 3.2.0 – presence server

Reg-Info Implementation

RFC3860
pub-sub service for
location data

RLS
OMA specs
split NOTIFY bodies
XPath support within doc

Embedded XCAP server

OMA - specs
If-Match cond

Presence Server

data distribution across
many instances through
database

Presence User Agent

updates for latest
RL services

New in 3.2.0

async module

run asynchronously parts
of config file
(route blocks)

ipops module

a set of operations for
handling IPv4/IPv6 addresses

sdpops module

SDP body
management

json modules

New features in old parts

acc - write full CDR at once
dialog - attach extra attributes
core - more pre-processor directives
pv - new variables and transformations
tmx - export of async TM functions
sqlops - support for xavps
uac - enhancements to remote registration
siptrace - traffic replication enhancements
.....

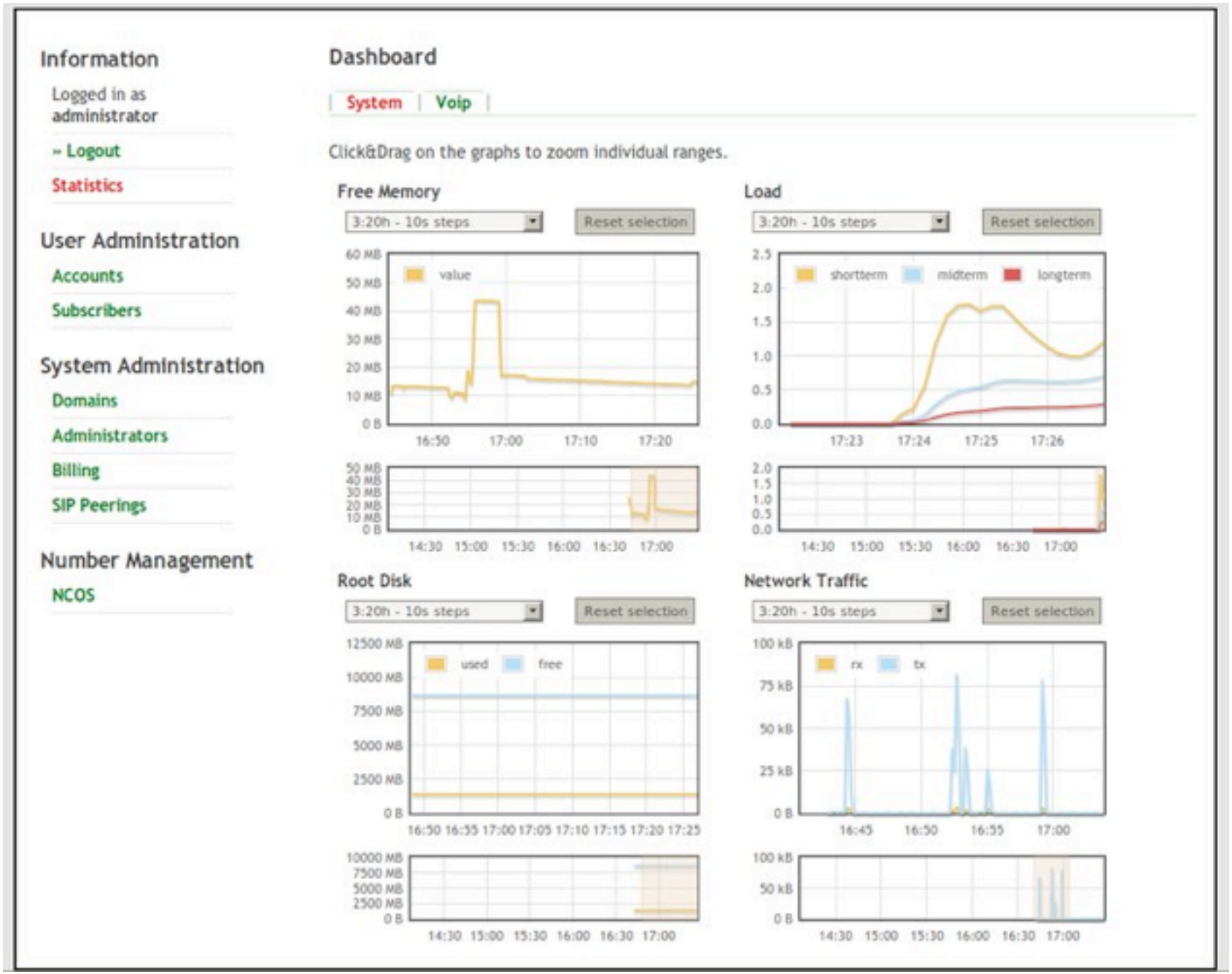
IMS Extensions
about 10 new modules
(P-CSCF, I-CSCF, S-CSCF...)

SIP:Provider CE

SIP:Provider - http://www.sipwise.com/products/spce/

* complete VoIP servicing platform using Kamailio for SIP routing
* administration interface and user portal
* ready to roll-out open source Community Edition
* easy to install with DEB packages - images for VMWare and VirtualBox

SIP:Provider CE



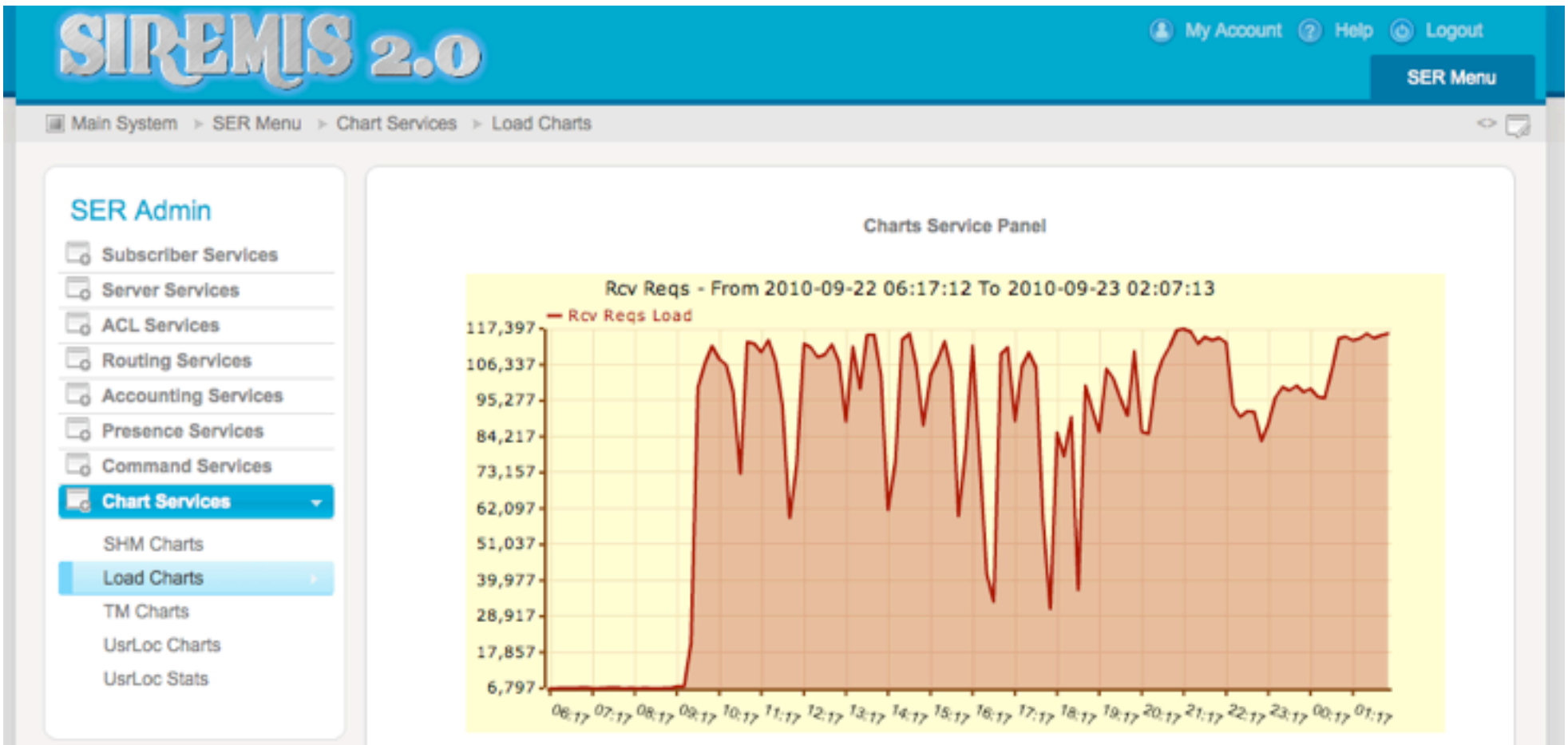
Elsipo – this SIP browser

https://github.com/miconda/elsipo

Homer Project

Siremis 2.0

http://siremis.asipto.com/



TLS – Scalability

- a research project about Green VoIP
  - by Columbia University, NY
  - using complete config file, with user authentication and NAT traversal
  - injected traffic captured from an European ITSP

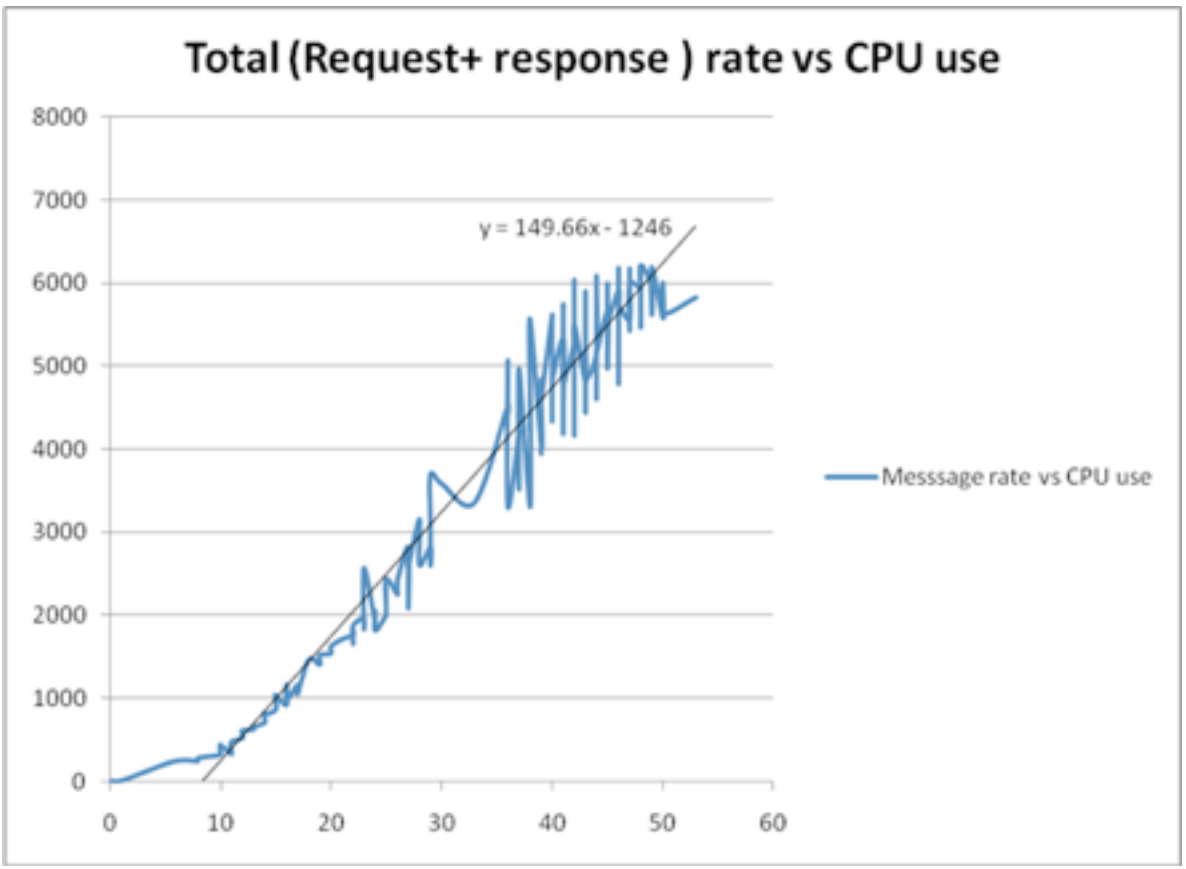
http://www.kamailio.org/w/2011/05/green-voip-energy-efficiency-and-performaces-of-v3-0/

Some interesting results:

- one instance of SIP server with *500 000 online users* (mixed users – behind and not NAT routers) – consumed energy *210W*
- one instance of SIP server with *1 000 000 online users* (no NAT involved) – consumed energy *190W*
- on a 32-bit machine with 4GB of memory and with 2.5GB reserved for SIP server, the server could support *43 000 simultaneous TLS connections* – consumed energy *209W*
- one SIP server instance with *80 000 permanent TCP connections*, the SIP server could still handle at least *1000 requests per second* and a connection arrival rate of *1000 new connections per second*, done for 20 000 new connections. CPU load generated by the SIP server was from *6% to 8%*.

TLS – Stress tests

- private company lab environment
  - Kamailio 3.1.x with 8 children and 2 GB memory
- traffic stress
  - 6000 SIP messages/second for 2 weeks
- socket stress
  - created over 4000 connections
  - released the connections immediately
  - at the same time created more connections



Thank you!
Questions?

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BERLIN, GERMANY
SEP 2, 2011
10 years SER Conference
SIP Express Router & Kamailio