

Kamailio

The Open Source SIP Server



The Story For Asterisk

Daniel-Constantin Mierla

Co-Founder Kamailio

www.kamailio.org

www.asipto.com



World of Telephony



AsteriskTM

?

Telephony Engine

Central Element?

?

The Call



?

SIP Signaling Routing Engine

SIP *Signaling* Routing Engine

Central Element?

?

YOU

Implicitly

Kamailio Does Only One Thing

And It Does Very Well

It Does Nothing

OK, Joking!

Now Seriously

**Implicitly
Kamailio
Really
Does
Nothing**

Now Imagine

If Telephony Was Transportation

What Would You Like To Have?











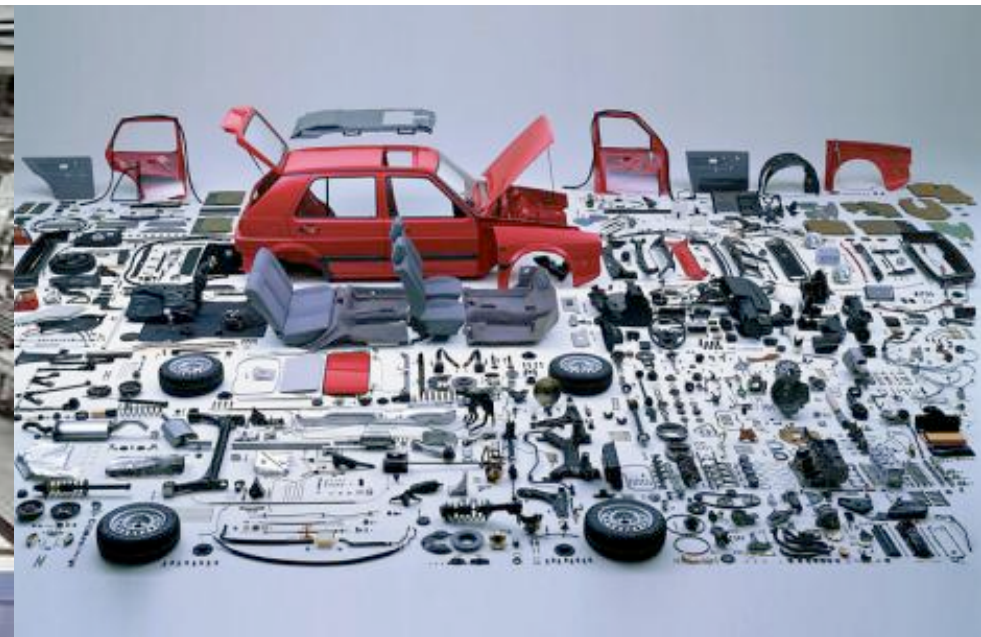
Any Of Them Can Be Yours

But Is Not About Riding

It Is About Engineering Them

So Now, Everyone,
Please Meet Our Special Guest!

Kamailio



Stone It In Your Head

You Are Not The Driver

You Are The Engineer

Without Proper Knowledge

Your Baby Can Be



On The Other Hand

The Limit Is Your Imagination



It's All About You!

What Is
Needed
To Start Becoming A Good
Engineer?

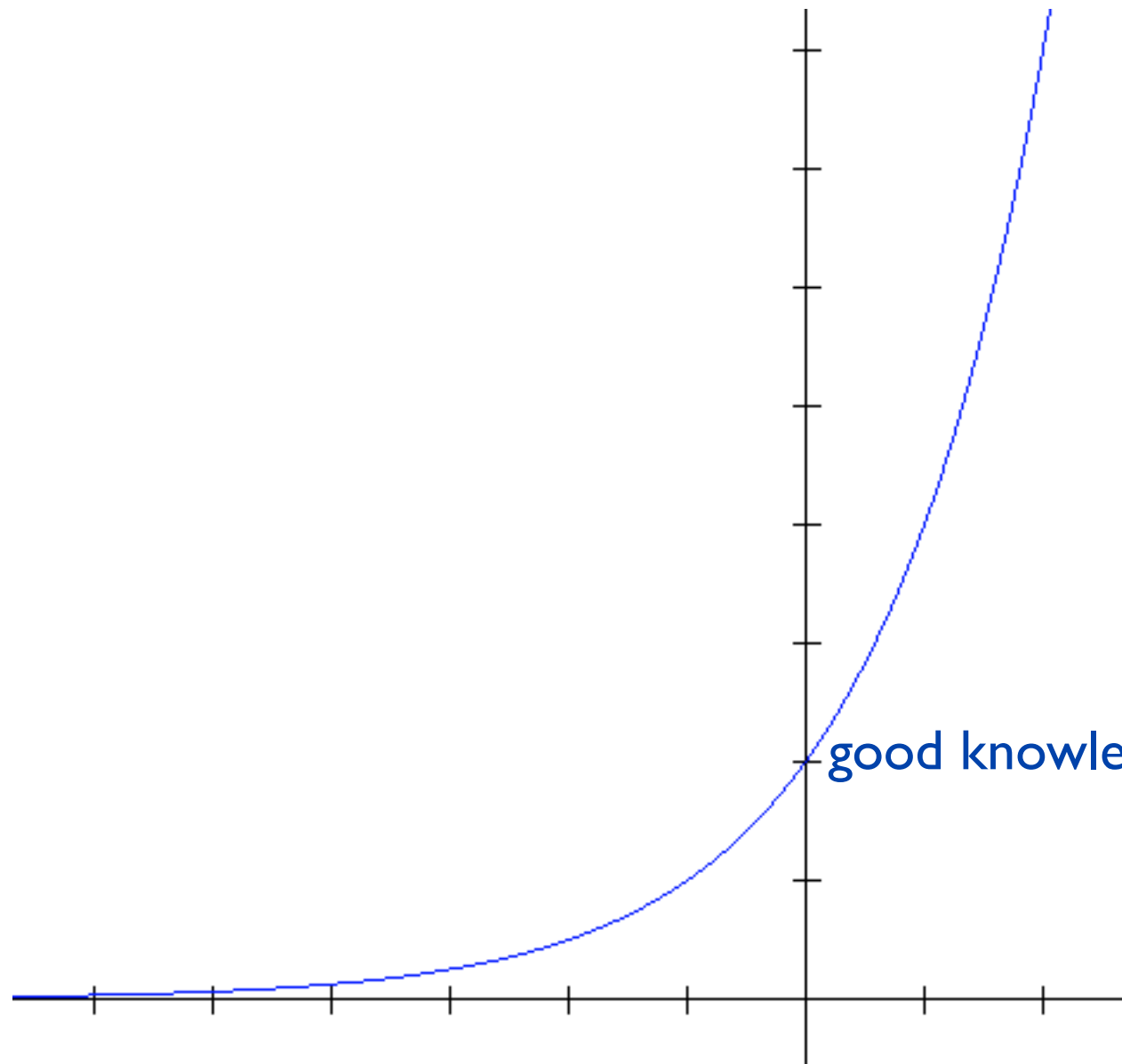
Three Things

I. Excellent Knowledge Of SIP

2. Excellent Knowledge Of SIP

3. Excellent Knowledge Of SIP

kamailio learning curve



it helps quite a bit:

- *imperative programming*
- *practicing*

good knowledge of sip

Back To Our Business

Real Time Communications

Kamailio Is Not About Calls

Its About Connecting Things

voice
video
instant messaging
presence
desktop sharing
file transfer
contacts list management
monitoring systems
...

Typical Use Cases With Asterisk

load balancer

least cost router

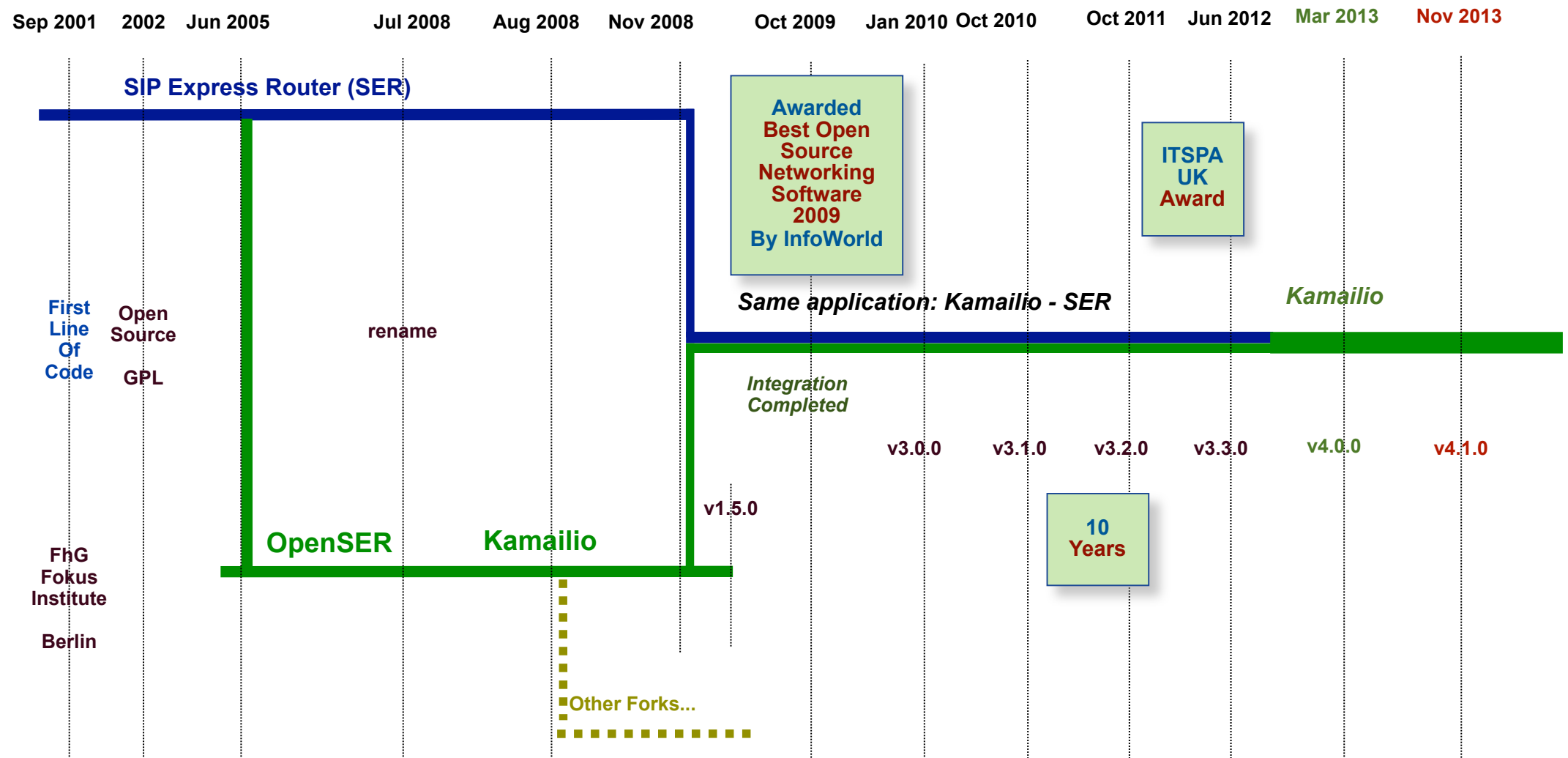
location registrar

signaling encryption gateway

security guardian

scalability systems

re-routing engine



Over 180 Modules

**SIP proxy, redirect
and registrar server
user registration
with
digest authorization**

**Plug-in module
interface**

**Embedded
interpreters for
Lua, Perl,
Mono (C#), Python**

**IPv4-IPv6
UDP/TCP/TLS/SCTP
SCTP
multi-homing
multi-streaming, statistics
UDP Raw Sockets
DNS NAPTR & SRV**

**Multi-domain support
Customizable routing policy
User location service**

Presence Services

**End-to-End Presence
SIMPLE Presence Server
Embedded XCAP Server
Dialog Info (blinking lamps)
Resource Lists Service (RLS)
Profile and Conference Events
Presence User Agents**

**Load Balancing
Least Cost Routing
DID - Prefix
Routing
Aliases
Ring Groups
Speed Dial
ENUM Routing**

Link any application to or control Kamailio using
FIFO/UNIXSOCK/DATAGRAM/TCP/XMLRPC/HTTP interfaces

Embedded
HTTP
client
server

OSP support for peering
Connector for Java SIP Servlet
LDAP - H350

NAT traversal
Security
permissions
anti-DOS attacks
User call
preferences
Call Processing
Language

*Database
Connectors*
MySQL
PostgreSQL
SQLite
UNIXODBC
BERKELEYDB
ORACLE
Text files

Accounting
log file, database,
Radius, Diameter

Gateway

SMS
XMPP

Instant Messaging
End-to-End
Offline Storage
Embedded MSRP Relay
IM Conferencing

Asynchronous
TCP - TLS
SIP Request Processing
Cfg Route Block Execution

IMS
Extensions

Traffic Shaping

limit inbound traffic rates
track DoS - DDoS

Active calls

tracking
max duration
counting per user
click-to-dial

Number Portability
Topology Hiding
GeoIP API
Internal Message Queues
Registration to Remote Servers
Generic Database Cluster

Web & CLI
Tools
SIREMIS
SERCMD
KAMCTL

DNS Caching System

srv load balancing
fast failover
blacklisting
avoid long blocking

Config File

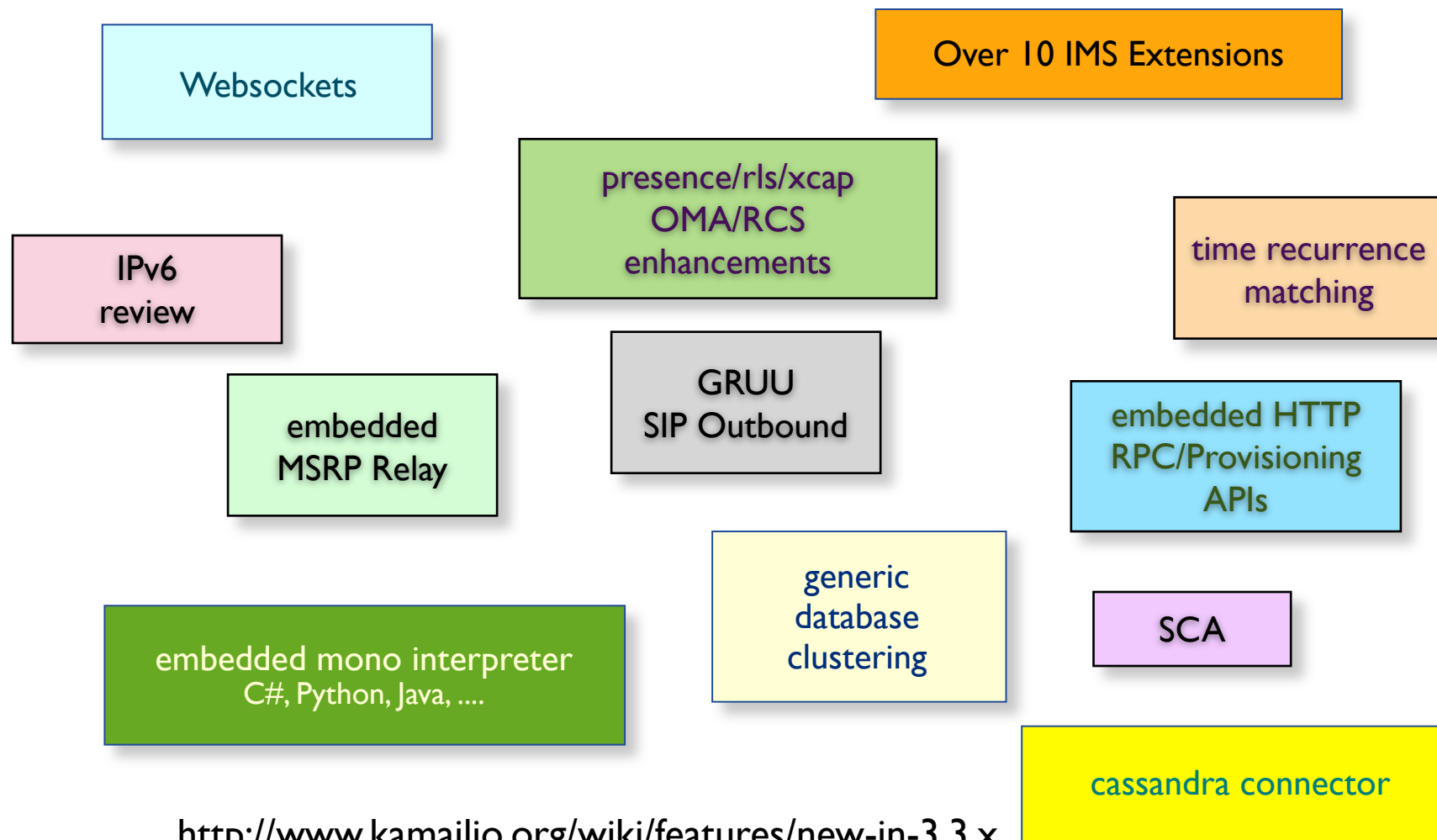
Parameter Reload Framework
Cfg SQL Query API
Preprocessor Directives
(define, include)
Interactive Debugger

Security

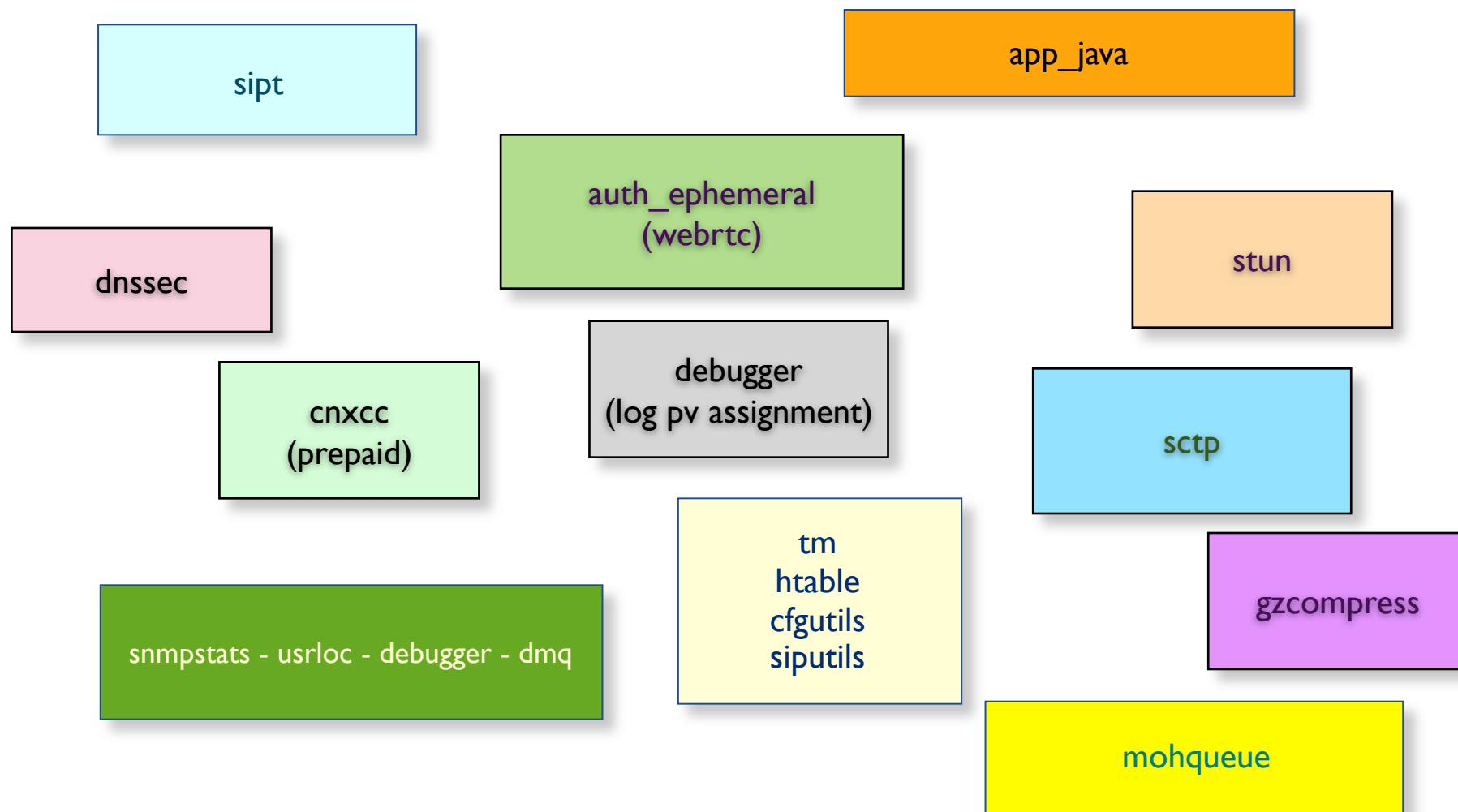
encryption
block addresses
IP authorization
user authentication
certificate validation

NoSQL
Memcached
Redis
Cassandra

time recurrence matching
SDP operations



<http://www.kamailio.org/wiki/features/new-in-3.3.x>
<http://www.kamailio.org/wiki/features/new-in-4.0.x>



<http://www.kamailio.org/wiki/features/new-in-devel>

Demo At Booth #19

**WebRTC
To
Classic SIP/VoIP
Gateway
(both signaling and media)**

<http://www.kamailio.org/wiki/features/new-in-devel>

What Actually Values A Lot

very large development team
sharp developers
friendly community
distributed management
open environment
sustained innovation
quality driven collaboration
continuous evolution

<https://www.ohloh.net/p/sip-router>

Activity

30 Day Summary

Sep 8 2013 — Oct 8 2013

169 Commits

17 Contributors
including 3 new contributors

12 Month Summary

Oct 8 2012 — Oct 8 2013

1835 Commits

Up +523 (39%) from previous 12 months

50 Contributors

Up +13 (35%) from previous 12 months

In a Nutshell, Kamailio (SIP Express Router)...

... has had 18,676 commits made by 132 contributors representing 813,365 lines of code

... is mostly written in C
with an average number of source code comments

... has a well established, mature codebase maintained by a very large development team with increasing Y-O-Y commits

... took an estimated 222 years of effort (COCOMO model) starting with its first commit in September, 2001 ending with its most recent commit about 21 hours ago

Cocomo

Kamailio (SIP Express Router) - Project Cost

Include

Markup And Code

Avg. Salary

\$ 55000 /year

Codebase

813,365 Lines

Effort (est.)

221 Person Years

Estimated Cost

\$12,157,955

Updated Oct 08, 2013

more at [Ohloh](#)

Stats



Kamailio (SIP Express Router)

Main Language: [C](#)

Total Lines of Code: [627,604](#)

Active Contributors: [50](#)

Commit Activity Timeline:



5 year commit count

Updated Oct 08, 2013

more at [Ohloh](#)



<http://conference.kamailio.com>



Kamailio + Asterisk

common developers

Olle
Klaus
Torrey

Kamailio + Asterisk

products and services

sipwise.com

thirdlane.com

edvina.net

palner.com

asipto.com

ipcom.at

entswitch

Portugal Educational UC Infrastructure
(500 pairs K+A)

instead of conclusions

You Like Just Being The Pilot
(care only of commanding your business)

Plenty Of Options
Start By Visiting:

<http://www.kamailio.org/w/business-directory/>

Thank you!
Questions?

Daniel-Constantin Mierla

Co-Founder Kamailio

<http://www.asipto.com>

daniel@asipto.com

twitter: @miconda

<http://www.linkedin.com/in/miconda>

EXPO BOOTH #19