

Kamailio – an introduction

Welcome!

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Kamailio project

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Outline

- 1. about Kamailio*
- 2. why people use this server*
- 3. usage scenarios*
- 4. recent developments*
- 5. roadmap and outlook*
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About Kamailio

building block of VoIP infrastructures

provides core services

proxy

registrar

balancer or router

application server

no PBX, more like a router

cares only about signaling, no media data

foundation for custom high-performance

SIP services

About Kamailio

an open source project

*licenced under GPL (version 2 or later)
over 200,000 lines of C code
frequent time-based releases
managed from a board of core developers*

community aspects

*over 20 developers provides support and contribute new features
friendly and healthy user community
regular meetings at international free and open source conferences*

a mature product

*used from carriers like 1&1, QSC, Telefonica..
several companies use it to provide telephony turn-key solutions
also sold as appliance for SMEs
used in Cisco Linksys Service Node*

Why Kamailio

Scalability

*usable from small embedded systems to carrier grade systems
from a few hundreds user up to several millions*

Performance

*on a standard server several thousands calls per seconds throughput is no problem
a server with enough memory can manage 500.000 users*

Flexibility

*small core written in C
functionality can be added with modules, over 90 already available
configuration script allows access to any part of the SIP message
routing decisions can be derived from many different sources*

Portability

works on Linux and Unix (Debian, RedHat, OpenBSD, Solaris..)

Usage scenarios

carrier services

load balancing

provide core SIP services

least-cost routing to gateways for PSTN connectivity

translate between different networks

multi-protocol instant messaging

message adaptations because of different SIP dialects

convergence between IM and voice

SIP presence support for user availability or call state

additional services like shared lines appearance,

message waiting indication

Example setup

Basic VoIP infrastructure for telephony services

Kamailio with MySQL database

one (Debian) Linux server

web interface for management

advanced services

Kamailio, Asterisk and Callweaver

dedicated database or directory service

one server for each service (balancing, proxy, registrar)

Mediaproxy or nathelper to get through the NAT

PSTN gateways

high-availability infrastructure

distribute services and databases to more server

setup failover solution

service and quality monitoring

Kamailio at 1&1

usage

*proxy, registrar, load-balancer, least-cost-routing
application server for MWI and other presence services*

some numbers

*1000 million minutes per month to the PSTN
2 Million customers on the platform
more than 3 million registrations in the DB*

redundant infrastructure on several levels

clustering for applications and databases

interfacing to other carrier networks, asterisk and callweaver

custom testing and monitoring systems

Whats new in Kamailio 1.5.0



five months of coding, one month testing

new functionality and features

many new modules

extensions in the core

documentation

for users and developers

consolidation

integrate common functionality

remove old and obsolete functionality

Web interface SIREMIS

easy setup of user accounts and routing rules

Whats new in Kamailio 1.5.0

features

generic memory hash table implementation, new multi-protocoll IM gateway dialog info presence support, http interface, new sql operations in total were over 12 new modules introduced more flexible interfacing with SIP messages from the configuration

refactoring and cleanups

obselete unused memory management functions, refactoring of core functions extensive refactoring of routing modules, making them more scalable and maintainable integrate uri, options, gflags and other small modules into siputils, utils, cfgutils

documentation and quality assurance

user documentation updates all over the place, man pages for all modules doxygen comments were extended or new added for many modules extensions and updates to the test suite, now over 45 tests

Roadmap and outlook



Roadmap and outlook

maintenance

version 1.5.x and 1.4.x are now supported

OpenSER branch 1.3.x reached end of life

short term goals

native memcached support

support for huge routing databases

further consolidation and documentation extensions

replace our core with the one from sip-router

medium term goals

further merge with the sip-router project

add prepared statements support to modules

merge duplicated modules

sip-router project



sip-router project

merge with the SER project, Kamailio forked several years ago

functional goals

improved network core for more scalability, stability and performance

prepared statements support for the DB layer

updates to the core in areas like memory management, DNS, timer and locking library framework to keep the core small and maintainable

updates and new features for command line tools and management interfaces

organisational goals

larger development team, faster development cycle

easier maintenance, more expertise available

larger community, more testing and production deployments

better promotion and more popularity

better documentation, more reliability and trust, solid business environment

Installation and setup



Installation and setup

download the actual stable release

*source code and also binary packages are available
the releases in stable distributions are usually too old*

setup database and configure server

*tools to setup the DB are available, but also the SQL scheme can be used
enable proxy and registrar functionality, the default configuration can be used as template*

setup some users

*tools to setup users are available, or use the web interface
configure your hard or soft phones*

*if something don't work, look in the documentation, search for the
error message, then ask at our users list :-)*

have fun!

Thanks for your attention

More informations and contact:

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kamailio user and developer mailling list

extensive documentation available at <http://kamailio.org>

#kamailio IRC channel on freenode.net

Pictures:

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