



# *OpenSER* **XMPP-SIMPLE Gateway**

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- **Transparent XMPP-SIMPLE gateway**
- **Open Source software**
- **Instant Messaging**
- **End-to-End Presence model**
- **Client-Server Presence model**
- **VoIP (Jingle-SIP) – only at signaling level if possible**



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### **SIMPLE-Jabber Gateway**

- \* Jabber 1.3
- \* SIP Express Router
- \* FhG Fokus, Germany, Berlin

Initial target: SIMPLE to any IM network

- \* *reuse of Jabber 1.3 IM gateways (transports)*
- \* *have just on translation in SIP side (SIMPLE-XMPP)*
- \* **SIMPLE – MSN**
- \* **SIMPLE – ICQ**
- \* **SIMPLE – Yahoo!**



## **Scalability**

- *for each SIP account must exist a Jabber account*
- *each SIP account needed a TCP connection to Jabber server*
- *too many connections from same IP to different IM servers*

## **Security**

- *SIP users have to provide credentials to be stored in SIP server*
- *some IM services accepts only one registration*

## **Interoperability**

- *not all SIP users are visible in XMPP world and vice versa*
- *delay in new XMPP/SIMPLE user propagation*



## ***Focus on XMPP***

- *open protocols allow to improve the interoperability*
- *trend to migrate to open protocols*
- *XMPP is widely used IM&P protocol*

## ***Transparent gatewaying***

- *don't require extra credentials from users*
- *one-to-one relation between XMPP address and SIP address using DNS*
- *immediate visibility of the new accounts in both sides*
- *gateway the signaling layer only*

## ***Scalability***

- *use server-to-server connections*
- *geographic distribution of gateways*



# Used technologies



## **OpenSER 1.2.0**

(<http://www.openser.org>)

- open source SIP server



## **Jabberd2**

(<http://www.jabber.org>)

- open source XMPP server





- open source SIP server
- very flexible and widely used
- IPv4/IPv6
- all SIP required protocols: UDP/TCP/TLS
- many SIMPLE extensions
  - IM offline storage
  - IM conference chats
  - end-to-end presence model
  - client-server presence model
- good DNS support
  - DNS failover
  - NAPTR/SRV support
- modular architecture
- written in C and allows custom SIP applications in Perl/Java
- runs on most of Unix-like OS



- open source
- reference XMPP server implementation
- widely used
- modular architecture
- good DNS support (SRV)
- designed for scalability
- secure communication – TLS
- written in C
- runs on Unix-like OS and Windows
- no need to list IM and Presence features as they mainly developed over time in Jabber
- JINGLE?!?





- SIMPLE is everything but **simple**
- better XMPP open source libraries
- **develop an XMPP component in OpenSER**
- the component connects to Jabberd2
- benefit of all XMPP features in Jabberd2
- domain names are used for routing decision



- **draft-saintandre-xmpp-simple-09**
  - Basic Messaging and Presence Interworking between the Extensible Messaging and Presence Protocol (XMPP) and Session Initiation Protocol (SIP) for Instant Messaging and Presence Leveraging Extensions (SIMPLE)
- **Peter Saint-Andre (XSF)**
- **Focus**
  - Instant Messaging
  - Presence
- **Looking forward for Voice interoperability specs**



- **download Jabberd2**
  - <http://www.jabber.org>
- **install Jabberd2**
  - no patches or add-ons needed
- **download OpenSER 1.2.0**
  - <http://www.openser.org>
- **install OpenSER along with xmpp module**
  - xmpp module is not compiled nor installed by default
- **no special configuration bits for Jabber2**
  - OpenSER xmpp module will connect to it as **XMPP component**

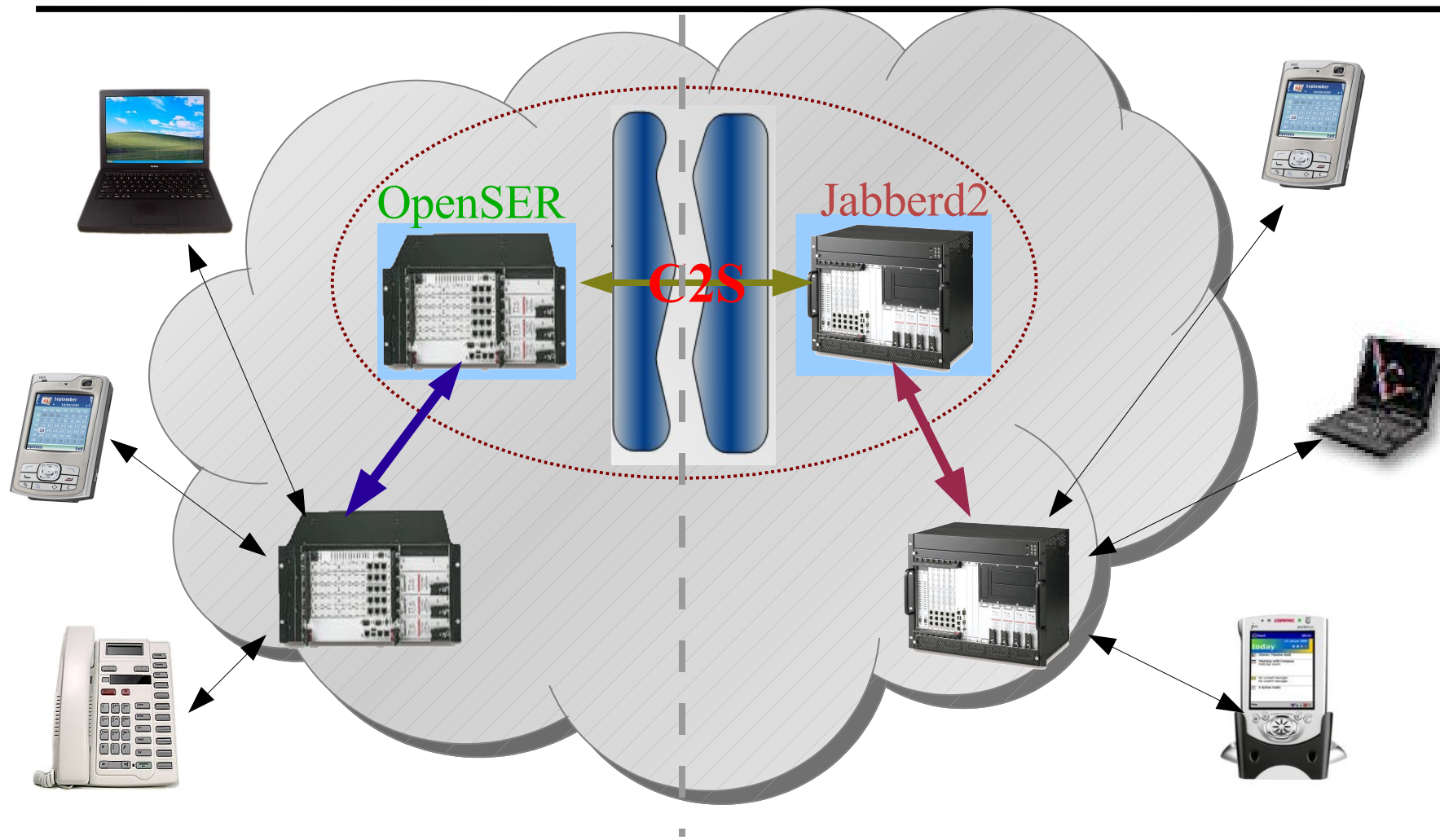


- in “sip-server” directory
  - make all include\_modules="xmpp"
  - make install include\_modules="xmpp"
- in “/usr/local/etc/openser/openser.cfg”
  - loadmodule “xmpp.so”
  - modparam("xmpp", "domain\_separator", "\*")
  - modparam("xmpp", "gateway\_domain", "sip-xmpp.openser.org")
  - modparam("xmpp", "xmpp\_domain", "xmpp-sip.openser.org")
  - modparam("xmpp", "xmpp\_host", "xmpp.openser.org")
  - modparam("xmpp", "backend", "component")

```
# filter XMPP destinations
if (uri =~ "sip:.*@sip-xmpp\.openser\.org")) {
    # absorb retransmissions
    if (!t_newtran()) {
        sl_reply_error();
        exit;
    }
    # handle IM
    if (is_method("MESSAGE")) {
        xlog("message to XMPP: from <$fu> to <$ru>\n");
        if (xmpp_send_message()) {
            sl_send_reply("202", "Accepted");
        } else {
            sl_send_reply("404", "Not found");
        }
        exit;
    }
    # unsupported type of SIP message
    xlog("message to XMPP: method [$rm] not supported yet\n");
    sl_send_reply("503", "Service unavailable");
    exit;
}
```



- **default compilation and installation**
- **c2s.xml**
  - `<id>xmpp.openser.org</id>`
- **sm.xml**
  - `<id>xmpp.openser.org</id>`
- **recommended to change passwords and restrict IP address binding**





- **YATE**
  - audio – jingle
- **Asterisk**
  - audio - jingle
  - no instant messaging
  - no presence
- **FreeSwitch**
  - audio – jingle
  - instant messaging
  - end-to-end presence
- **SER**
  - old version of jabber module in OpenSER
  - instant messaging
  - basic presence





- **work started long time ago, but with no high priority**
  - since 2002
- **the focus is to get signaling-only gateway**
  - unlike other implementations, don't handle media stream
- **looking only at gatewaying service**
  - no bundled XMPP/SIP service
  - don't reinvent the wheel by writing a XMPP jabber in OpenSER
  - try to keep state and session details in messages



- **DNS features**
  - extended NAPTR support
  - DNS failover
  - IP filtering
- **Scripting extensibility**
  - PERL application interface
  - JAVA SIP Servlet application interface
- **SIMPLE Presence**
  - server-client model
  - presence user agent client
- **Instant Messaging**
  - offline storage
  - IM conferencing



- don't limit to one protocol
- don't try to use a protocol for everything
- allow diversity in development
- better communication between open projects
- better interoperability between open protocols
- friendly environment between open source
- join forces for common interests



- **SIP RFC**
  - <http://www.ietf.org/rfc/rfc3261.txt>
- **XMPP Core**
  - <http://www.ietf.org/rfc/rfc3920.txt>
- **XMPP-SIMPLE Interoperability**
  - <http://www.xmpp.org/internet-drafts/draft-saintandre-xmpp-simple-09.html>
- **Jabberd2**
  - <http://www.jabber.org>
- **OpenSER**
  - <http://www.openser.org>

# THANK YOU!

## Questions?