iChat-SIP Gateway
User Documentation

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Table of Contents

Introduction

The iChat-SIP gateway is designed to allow communication between the Mac OS/X iChat client and standard SIP clients for audio calling purposes. It also provides the ability to register iChat users to a SIP registrar server for routing purposes.

Building the Source Code on Unix/Linux

Note: <basedir> represents a base working directory for the instructions below.

Prerequisites: The following standard packages should be installed on the system prior to the following:

- GNU C++ compiler and tools

- SVN client - http://subversion.tigris.org/

- OpenSSL 0.9.8 libraries - http://www.openssl.org/

- GNU Perfect Hash function (gperf) generator - http://www.gnu.org/software/gperf/

- Perl Compatible Regular Expressions (PCRE) library - http://www.pcre.org/

- GNU TLS Library (used by gloox) - http://www.gnu.org/software/gnutls/devel.html

Building Resiprocate SIP Libraries

1. Go to <basedir>.

2. mkdir resip - create a project directory that will contain all the files required for the gateway project

Note: If the following does not work - please download root certificates from www.cacerts.org or just use http instead of https. Https is only required for SVN commits.

3. svn checkout https://svn.resiprocate.org/rep/resiprocate/main resip

4. cd resip - Note: steps 4-6 can be skipped if building on Windows.

5. ./configure

   Choose all defaults, except:

   - Build Repro proxy server: no   <- saves build time

- Compile in IPv6 support: yes

6. make

Building Gloox Jabber Library

Windows

1. Get Gloox from: http://camaya.net/glooxdownload. Download gloox-0.9.9.8.tar.bz2

2. Extract gloox-0.9.9.8.tar.bz2 to <basedir>/resip/contrib

3. rename gloox-0.9.9.8 to gloox

4. Go to gloox directory, and open the gloox.dsp file under the desired version of Visual Studio.

5. Allow Visual Studio to automatically convert the project file to a .vcproj.

6. Proceed to Building ichat-gw binary.

Linux

7. Get Gloox from: http://camaya.net/glooxdownload. Download gloox-0.9.9.8.tar.bz2

8. cd <basedir>/resip/contrib

9. tar -jxvf <filepath>/gloox-0.9.9.7.tar.bz2

10. mv gloox-0.9.9.7 gloox

11. cd gloox

12. ./configure

13. make

Building ichat-gw binary

Windows

1. Open <basedir>/resip/apps/ichat-gw_9_0.sln from Visual Studio 2008.

2. Add the following libraries to link with in the gloox project file. Configuration Properties/Linker/Input: wsock32.lib Dnsapi.lib crypt32.lib Secur32.lib

3. Build project.

Linux

1. cd <basedir>/resip/apps/ichat-gw

2. make

3. cd jabberconnector

4. make

5. cp ichat-gw-jc ../

Note: ichat-gw-jc is an executable that is responsible for the jabber connection. It must reside in the same directory as the ichat-gw executable.

Configuration

Prerequisites

1. A Jabber server is setup and configured with Jabber component support enabled.

2. A SIP proxy server is setup and configured.

3. The iChat gateway server has public (non-NAT'd) IPv4 and/or IPv6 addresses.

4. The iChat gateway server has any local firewalls disabled.

Configuration File

Note: The configuration is only read once at startup. The gateway must be restarted to apply new settings.

SIP settings

IPAddress - Local IP Address to bind SIP transports to. If left blank ichat-gw will bind to all adapters. Note: If you specify an IP address here it will not be possible to support both IPv4 and IPv6 at the same time.

DNSServers - Comma separated list of DNS servers, overrides the default OS detected list (leave blank for default DNS servers).

SIP Gateway Identity - Used in From header of SIP calls, when caller is unknown. Value must be a valid formatted SIP NameAddr. Ie. "{displayname}" <{SIP URI}>. Currently this setting is only used when calling iChat endpoints and is never displayed to the end user.

UDPTCPPort - Local port to listen on for SIP messages over UDP or TCP

TLSPort - Local port to listen on for SIP messages over TLS

TLSDomainName - TLS domain name for this server (note: a SIP domain cert and private key for this domain must be present in the current directory)

KeepAlives - Enable/Disable TCP/UDP CRLFCRLF keepalive packets for SIP endpoints: 1 to enable, 0 to disable

OutboundProxy - URI of a proxy server to use a SIP outbound proxy. This setting should not be required if proper DNS based SIP routing is operational.

RegistrationTime - The requested amount of seconds between SIP re-registration requests. Set to 0, to instruct the iChat gateway not to perform any registrations

RegistrationRetryTime - The requested amount of seconds between retrying SIP registration requests after a registration failure.

General settings

LogLevel – Controls the amount of logs sent to the console. Valid values are: NONE|CRIT|ERR|WARNING|INFO|DEBUG|STACK

LogFilename – Filename of log file

LogFileMaxLines – The maximum number of log lines in the log file. After the log contains this many lines it will start a new log file. Note: 50000 lines is approximately a file size of 5Mb.

GatewayIPCPort - Gateway IPC Port for IPC UDP socket bound to 127.0.0.1. Used for communication between the two components/executables of the jabber gateway.

JabberConnectorIPCPort - Jabber Connector IPC Port for IPC UDP socket bound to 127.0.0.1. Used for communication between the two components/executables of the jabber gateway.

IChatProceedingTimeout - Timeout for obtaining iChat Resources when an iChat user is called

AlwaysRelayIChatMedia - If enabled then any time an IChat endpoint is involved then the media relay will be used. If disabled then the media relay is never used. Note: The media relay MUST be used to perform RTP IPV4<->IPV6 translation and to avoid media stream timeouts during a SIP phone hold. 1|true|on|enable to enable, 0|false|off|disable to disable.

PreferIPv6 - Prefer IPv6 over IPv4 - this setting controls which IP address we select when presented with the list of IP addresses for an iChat endpoint.

CodecIdFilterList - Comma separated codec ID filter list - specifies non-interoperable codecs that should be filtered from Sdp Offers. Note: Default is 3 (GSM), since it has proven non-interoperable between iChat and SNOM phones

MediaRelayPortRangeMin / MediaRelayPortRangeMax - Media relay port range min/max settings. These settings define the range of ports that will be used by the media relay.

Jabber settings

JabberServer - Hostname or IP address of the Jabber server to connect to.

JabberComponentName - Identity of this component - note: domain suffix should match Jabber server domain.

JabberComponentPassword - Jabber component password required in order to connect to Jabber server as a component.

JabberComponentPort - Port on Jabber server that accepts component connections.

JabberServerPingDuration - Duration between Jabber ping messages sent to the server, in order to keep the component connection alive.

JabberControlUsername - Username for the iChat Gateway control user - Note: iChat users of the Gateway must add this user to their roster.

Address Translation Rules

Address translation rules are used when an inbound iChat or SIP call is received by the gateway. The call destination is passed through these rules in order to translate the dialed number into the proper URI for dialing.

TranslationPattern - Address translation patterns use Perl compatible regular expression (PCRE) syntax. See http://perldoc.perl.org/perlre.html.

TranslationOutput – If a URI matches the corresponding translation pattern then it is translated using this output rule. Bracketed expressions from the pattern can be used in the output string by using a $<bracket-number> notation.   For example to output the first bracketed expression from the translation patter, use $1 in the output string.

Note: TranslationPattern and TranslationOutput settings can be repeated as many times as required, and MUST always be listed in pairs. Rules are evaluated in a top down manner, and the translation output for the first matching pattern is applied.

Examples:

In order translate call requests coming from iChat:
TranslationPattern=^xmpp:(.*)@ichat-gw.jabber.company.com$
TranslationOutput=sip:$1@sipdomain.com
Ie. xmpp:72*123@ichat-gw.jabber.company.com -> sip:72*123@sipdomain.com

In order to translated call requests from coming from standard SIP endpoints:
TranslationPattern=^sip:(.*)@sipdomain.com$
TranslationOutput=xmpp:$1@jabber.company.com
Ie. sip:username@sipdomain.com -> xmpp:username@jabber.company.com

Configuring ichat-gw for TLS
TODO

Certificate Configuration

Using the iChat Gateway

iChat Users

iChat users must add the gateway control JID to their roster in order to be able to receive calls from the gateway. Doing this installs a permission in iChat to allow the gateway to query its presence information. The control JID is formed by concatenating the JabberControlUsername and JabberComponentName settings: <JabberControlUsername>@<JabberComponentName>. For example: control@ichat-gw.jabber.company.com. Note: It is possible to place the following HTTP HREF on a web page to make this process easier on users:

<a href='xmpp:<controlJID>?subscribe'> Click here to subscribe to iChat Gateway control account.

Once this account is subscribed to by the user it will appear in their Buddies list. If the iChat gateway server is online at the time, then the control account will appear online. If an IM message is sent to this account, a message is returned – "You have reached the iChat gateway".

iChat users can also add SIP endpoint "speedials" to their buddy list for calling standard SIP endpoints. They are always of the form: <user>@<JabberComponentName>. For example: 72*123@ichat-gw.jabber.company.com

If an iChat user subscribes to any user on the gateway (component domain), other that the control user, then the gateway will advertise iChat audio capabilities to the client. This is evident by the green phone icon that appears next the user in the iChat interface. The iChat user can then place a call through the gateway to the translated SIP destination by just clicking on this green phone icon.

SIP Users

SIP users can dial iChat users by either:

1. Using a full SIP URI that is destined directly for the gateway:
    sip:<user>@<gatewayAddress>:<port> For example: sip:scott@192.168.1.100:5070

2. Using a Location server proxy and the automated iChat gateway SIP Server registrations. Each iChat endpoint that is online and subscribed to an address on the gateway is registered on the appropriate SIP server. The iChat users JID is passed through the address translator to form its corresponding SIP URI. This URI is then registered to the SIP server based on this SIP user's hostname. Note: if the RegistrationTime setting is set to 0, then no SIP registrations will be attempted.