

# Gaim!



a presentation by Mark (KingAnt)

# Who am I?

- **Born in Raleigh**
- **Started working on Gaim in 2001**
- **Did lots of OSCAR (AIM/ICQ) stuff**
- **Also lots of minor bug fixes**
- **Recently applying lots of patches**

# What is Gaim?

- **A multi-protocol instant messaging application**
- **Similar to Trillian, Kopete, Miranda and Everybuddy (but better, of course :-)**
- **Written in C, uses GTK**
- **Runs on Linux, Windows, BSDs, Solaris, ...**
- **Open Source (GPL)**
- **Originally written in late 1998 because Mark Spencer wanted to learn GTK**
- **We're all pastey white guys**

# Are there legal issues?

**A few different areas**

- **Figuring out the protocols**

**Some protocols are open source. For others, the protocol must be reverse engineered by analyzing network traffic**

**Decompiling their executables is bad**

# Are there legal issues?

**A few different areas (continued)**

- **Connecting to their networks**

**One perspective: Their IM servers belong to them, and connecting to them could be considered trespassing**

**Another perspective: They put their IM servers on the Internet for anyone to connect to**

**"[Gaim] ran into trouble a few years back when AOL blocked Jabber's AIM transport, which is the same code that Gaim uses ... AOL eventually gave up the chase."**

# Are there legal issues?

**A few different areas (continued)**

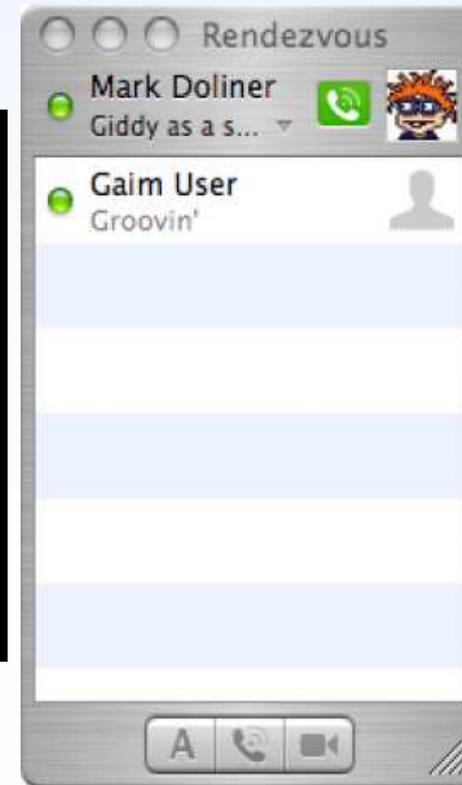
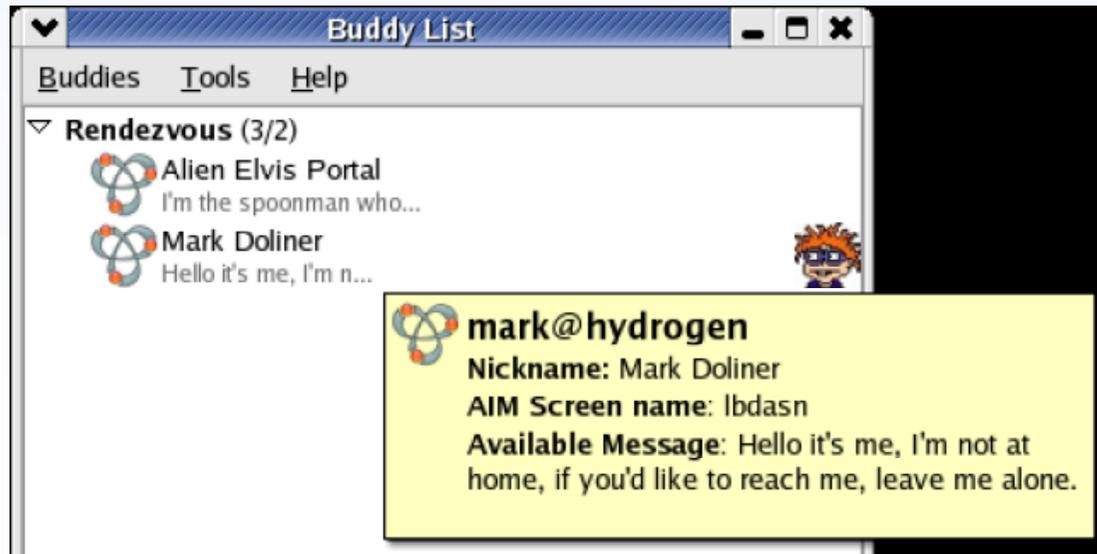
- **Trademark usage**

**Using their logos and brand names inappropriately is bad**

**"When i first made gaim, its name stood for the 'GTK AOL Instant Messenger,' and I put their logos all over the site. They sent me a C&D pretty quick." –Mark Spencer, original Gaim author**

# Where are we headed?

- Full Core/UI split
- Rendezvous



# **Distributed Development Team**

- **Totally sweet**
- **Mostly people in the US in their early 20's**
- **Work on what we're interested in**

# Contributing to Open Source

- **Always something to do**
- **Need lots of self-motivation**
- **At the mercy of whatever project you're contributing to**

# What is the release process?

- Try to "string freeze" ~4 days before releasing
- Try not to make major changes and accept translation updates until after the release
- Tag CVS, "make dist," create a tar.bz2, sign the tar.gz and tar.bz2
- Create signed RPMs for Red Hat 8 and 9, Fedora Core 1 and Mandrake 9.1 and 9.2
- Upload files to sourceforge
- Update web page

<capture> - Ethereal

File Edit View Capture Analyze Help

No.	Time	Source	Destination	Protocol	Info
1	0.000000	192.168.1.41	64.12.24.111	AIM	SNAC data, Family: Location
2	0.068126	64.12.24.111	192.168.1.41	TCP	5190 > 59173 [ACK] Seq=0 Ack=32 Win=16384 Len=0
3	0.070448	64.12.24.111	192.168.1.41	AIM	User Information
4	0.070466	192.168.1.41	64.12.24.111	TCP	59173 > 5190 [ACK] Seq=32 Ack=201 Win=63920 Len=0

Frame 3 (255 bytes on wire, 255 bytes captured)  
 Ethernet II, Src: 00:04:5ate81c:55, Dst: 00:20:78:03:89:c2  
 Internet Protocol, Src Addr: 64.12.24.111 (64.12.24.111), Dst Addr: 192.168.1.41 (192.168.1.41)  
 Transmission Control Protocol, Src Port: 5190 (5190), Dst Port: 59173 (59173), Seq: 0, Ack: 32, Len: 201  
 AOL Instant Messenger  
 Command Start: 0x2a  
 Channel ID: 0x02  
 Sequence Number: 42366  
 Data Field Length: 195  
 FNAC  
 Buddyname len: 12  
 Buddy Name: Mark Doliner  
 Warning Level: 0  
 TLV Count: 4  
 User flags: 49  
 Session length (sec): 281673  
 Unknown  
 Online since: 1086383403  
 Info Msg Encoding: text/aolrtf; charset="us-ascii"  
 Away Msg Encoding: text/aolrtf; charset="us-ascii"  
 Away Message: That's it, Marbique is going down.

```

0000 00 20 78 03 89 c2 00 04 5a e8 1c 55 08 00 45 00
0010 00 f1 c9 53 40 00 6b 06 2b 67 40 0c 18 6f c0 a8
0020 01 29 14 46 e7 25 ad f4 1c cb 65 d8 b8 67 50 18
0030 40 00 a5 fc 00 00 2a 02 a5 7e 00 c3 00 02 00 06
0040 00 00 00 1e 2b 0c 4d 61 72 6b 20 44 6f 6c 69
0050 6e 65 72 00 00 04 00 01 00 02 00 31 00 0f 00
0060 04 00 04 4c 49 00 1d 00 08 00 02 04 00 00 00
0070 00 00 03 00 04 40 c0 e5 2b 00 01 00 1f 74 65 78
0080 74 2f 61 6f 6c 72 74 66 3b 20 63 68 61 72 73 65
0090 74 3d 22 75 73 2d 61 73 63 69 69 22 00 02 00 16
00a0 79 20 6c 6f 76 65 20 62 65 69 6e 67 20 61 20 74
00b0 75 72 74 6c 65 2e 00 03 00 1f 74 65 78 74 2f 61
00c0 6f 6c 72 74 66 3b 20 63 68 61 72 73 65 74 3d 22
00d0 75 73 2d 61 73 63 69 69 22 00 04 00 22 54 68 61
00e0 74 27 73 20 69 74 2c 20 4d 61 72 62 69 71 75 65
00f0 20 69 73 20 67 6f 69 6e 67 20 64 6f 77 6e 2e
  
```

Filter: tcp.port eq 5190 Reset Apply

```

0000 00 20 78 03 09 c2 00 04 5a e0 1c 55 08 00 45 00
0010 00 f1 c9 53 40 00 60 06 20 67 40 0c 18 6f c0 a8
0020 01 29 14 46 e7 25 ad f4 1c cb 65 d0 b0 67 50 10
0030 40 00 a5 fc 00 00 2a 02 a5 7e 00 c3 00 02 00 06
0040 00 00 00 00 1e 2b 0c 4d 61 72 6b 20 44 6f 6c 69
0050 6e 65 72 00 00 04 00 01 00 02 00 31 00 0f 00
0060 04 00 04 4c 49 00 1d 00 08 00 02 04 04 00 00 00
0070 00 00 03 00 04 40 c0 e5 2b 00 01 00 1f 74 65 78
0080 74 2f 61 6f 6c 72 74 66 3b 20 63 68 61 72 73 65
0090 74 3d 22 75 73 2d 61 73 63 69 69 22 00 02 00 16
00a0 49 20 6c 6f 76 65 20 62 65 69 6e 67 20 61 20 74
00b0 75 72 74 6c 65 2e 00 03 00 1f 74 65 78 74 2f 61
00c0 6f 6c 72 74 66 3b 20 63 68 61 72 73 65 74 3d 22
00d0 75 73 2d 61 73 63 69 69 22 00 04 00 22 54 68 61
00e0 74 27 73 20 69 74 2c 20 4d 61 72 62 69 71 75 65
00f0 20 69 73 20 67 6f 69 6e 67 20 64 6f 77 6e 2e

```

```

+ x++++ Z++U++E+
++S@.k+ +g@.+0++
+).F+%++ ++e++gP+
@+++++ * ^ ++++++
+++++ +M ark Doli
ner+++++ ++++++1++++
++L++++ ++++++
++++@++ +++++.tex
t/aolrtf ; charse
t="us-asci"++++
I love b eing a t
urtle.++ ++.text/a
olrtf; c harset="
us-ascii " ++"Tha
t's it, Marbique
is goin g down+

```

# ASK LOTS OF QUESTIONS

- **Really**

Page Note 1:

Page Note 2:

Added support for server-stored buddy lists to the OSCAR library that Gaim used (libfaim) as an independent study project. Then later added support for Gaim.

Server-stored buddy lists, away messages in tooltips, typing notification, some of the preference clean-up, some code clean-up, tweaks to make Gaim follow the GNOME Human Interface Guidelines closer, accessibility.

Bug fix examples:

- Fixed problem with icons freezing. Icons that either didn't specify a delay between 2 frames or specified a delay of 0 caused a busy-wait type loop.
- Fixed focus chain for away message dialog. Initial focus still goes through the title, but hitting tab moves focus to the text entry. The buttons don't need to be focusable because they can all be accessed with keyboard shortcuts.
- Remove calls to hstrerror(). It's an obsolete function that is normally #f'ed out, but on certain systems (Irix? HPUX?) the code is enabled and hstrerror() does not exist.
- Lots of the preference changes.
- Make menu items grayed out when they should not be enabled.

Applying patches:

-Allow plugins (and Gaim itself) to add right-click options to any item in the buddy list (previously was just buddies and chats, now buddies, chats, groups, contacts and anything that could be added in the future)

Page Note 3:

Can connect to more than 1 IM service. Gaim supports AIM, Gadu-Gadu, ICQ, IRC, Jabber, MSN, Napster, Novell GroupWise, SILC, Yahoo! and Zephyr. Rendezvous is in progress. Trepia works for the most part, but isn't compiled by default.

Page Note 4:

I am by no means a lawyer... but in my opinion there are no \_major\_ legal problems.

Development of Jabber is completely open. See <http://www.jabber.org/> for lots of information. (XMPP is the IETF name for the Jabber protocol.)

AIM/ICQ (oscar), MSN and Yahoo! are all closed protocols. This means the specifications for how the protocol works must be pieced together using packet capture tools such as tcpdump and ethereal.

Decompiling their programs is basically copyright infringement. It's equivalent to looking at their (closed-source) source code and taking ideas from it.

Page Note 5:

As I see it, their IM servers are theirs to do what they want with. If they want to block 3rd party IM programs that's perfectly within their rights.

A few months ago Yahoo! changed their authentication some which caused some trouble for Gaim and other 3rd party clients. The Trillian developers eventually figured it out and donated some of their login code to Gaim.

In reality, I don't think any of the IM networks care enough to do anything. I saw an interesting quote in an internetnews.com article, "Tools like GAIM are in clear violation of our terms of service and our copyrights" (<http://www.internetnews.com/dev-news/article.php/3363481>).

Page Note 6:

Use "Gaim" or "gaim" and not "GAIM" or "gAIM."

Page Note 7:

Having the Gaim core and the user interface "split" means that someone can write a user interface using a different graphical toolkit. For example, a QT based front-end to Gaim instead of GTK. There is currently an ugly patch that rips out some old code and fully splits the core and UI to create a libgaim... this patch is used in the QTopia version of Gaim and in Proteus.

Proteus is a non-free IM program for OS-X. It's closed source, and the GPL prohibits them from linking directly to Gaim code. They get around this by using TCP to communicate with an open source Gaim-based "server." This server links with libgaim.

Page Note 8:

We all have areas that we specialize in, but we basically work on whatever we're interested in.

Me - AIM/Oscar, rendezvous

ChipX86 - MSN

faceprint - Jabber

Paco-Paco - IRC

marv - Yahoo!

Page Note 9:

485 open bug reports, 883 open feature requests... they might not all be valid, but there is definitely work to be done. Bug triage is good :) And documentation (both user-visible and developer-visible (code comments)).

Best thing to do is to find something you don't like and fix it.

Most of us are really picky about the code we'll accept. Use tab indentation. No compiler warnings. Don't do anything to hinder the core/UI split (don't add gtk code to the P RPLs or to files in the core that aren't named gtksomething.c).

Good articles:

<http://ometer.com/features.html>

<http://ometer.com/hacking.html>

<http://www106.pair.com/rhp/free-software-ui.html>

Other stuff by Havoc Pennington.

Page Note 10:

A "string freeze" is when no translatable strings are changed so that translators have time to make sure their translations are complete. We usually do this Sunday night

We usually release late Thursday night.

"make dist" creates a tar.gz of the source code.

The web page is updated with a news item announcing the release, an updated ChangeLog is posted, and the downloads page is changed to point to the new version.

Page Note 11:

Screenshot of ethereal.

The filter at the bottom is "tcp.port eq 5190." This causes Ethereal to only show packets that are sent to or from port 5190, and AIM traffic is, in practice, always sent over port 5190.

Page Note 12:

Screenshot of ethereal

The stuff with the red lines through it is the IP and TCP header.

Blue underlined: FLAP header

2a - Signifies beginning of frame

02 - FLAP channel (0x01 for login, 0x03 for errors, 0x04 for disconnect)

2 byte sequence number

2 byte length of data in contained in the FLAP

Green underlined: SNAC header

2 byte family ID# (this is the "locate" family)

2 byte subtype ID# (this is the user info subtype)

2 bytes of flags

4 byte SNAC ID#

Lots of SNAC data