

State of the Platform

Mark Lentczner, Google
Haskell Implementors
Workshop - 2012

Stats

Number of packages — **47** (21 ghc + 26 hp)

Lines of Code — **302k** (167k ghc + 135k hp)

Releases — **9** (May 2009 ~ present)

Distributions — **11+** (Mac, Windows, Linuxes)

Stats – June ~ August 2012

Downloads – **20,957** (228/day)

68% Windows

21% Mac OS X

8% Source

?? Linux

Mentions of "platform" on #haskell – **983**

People

Build Maintainers

Joachim **Breitner** — Debian
Mikhail **Glushenkov** — Windows
Mark **Lentczner** — OS X
Andres **Löh** — NixOS
Gabor **Pali** — FreeBSD
Jens **Petersen** — Fedora

Committee

Duncan **Coutts**
Iavor **Diatchki**
Isaac **Dupree**
Thomas **Schilling**
Johan **Tibell**
Adam **Wick**

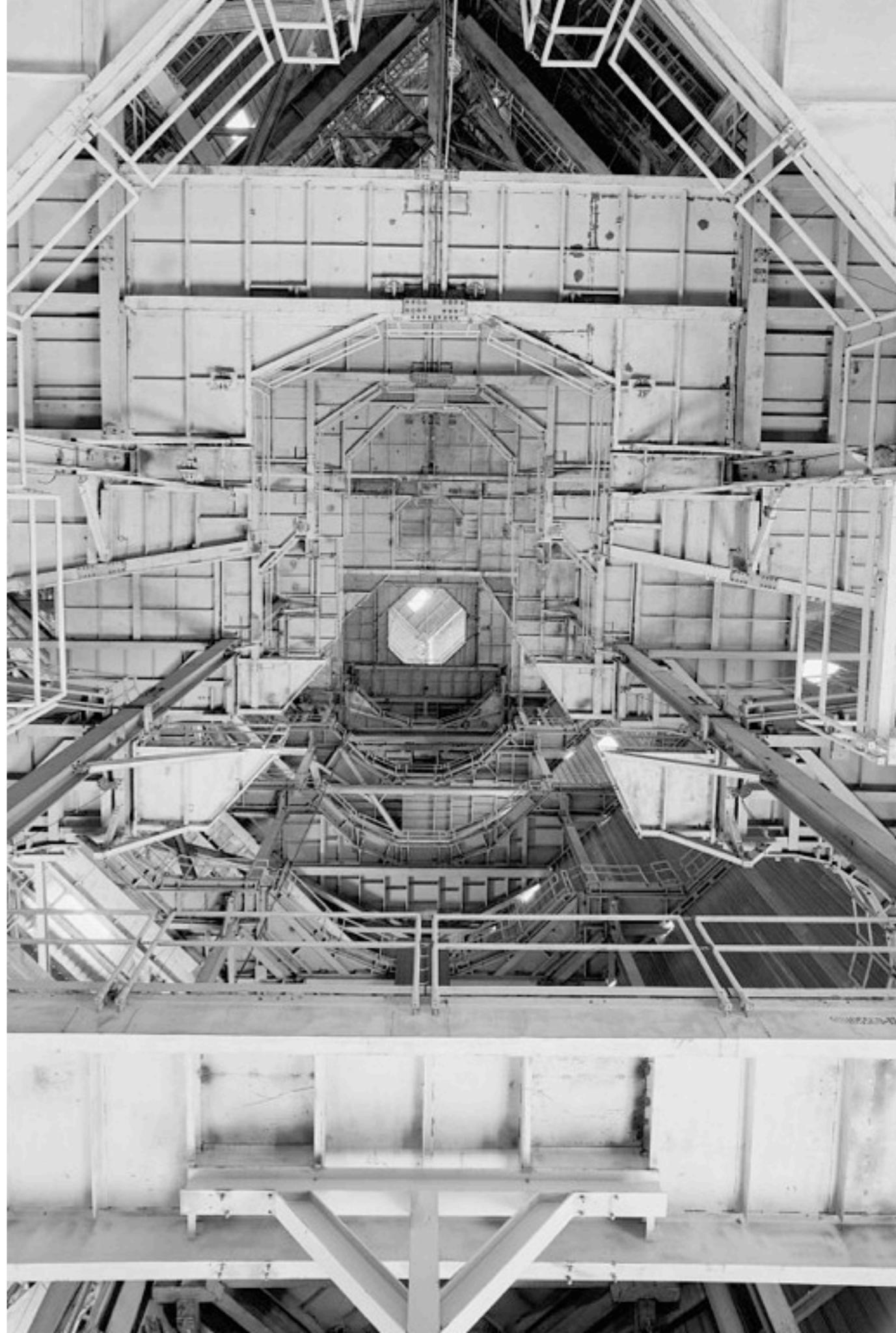
Release Team

Mark **Lentczner** — Chief Meanie
Duncan **Coutts**
Don **Stewart**

And the many contributors on

**haskell-platform@
libraries@**

Content



Packages – Haskell Platform 2012.2.0.0

ghc	7.4.1	time	1.4	random	1.0.1.1
array	0.4.0.0	unix	2.5.1.0	regex-base	0.93.2
base	4.5.0.0	Win32	2.2.2.0	regex-compat	0.95.1
bytestring	0.9.2.1			regex-posix	0.95.1
Cabal	1.14.0			stm	2.3
containers	0.4.2.1			syb	0.3.6.1
deepseq	1.3.0.0	cgi	3001.1.7.4	text	0.11.2.0
directory	1.1.0.2	fgl	5.4.2.4	transformers	0.3.0.0
extensible-exceptions	0.1.1.4	GLUT	2.1.2.1	xhtml	3000.2.1
		haskell-src	1.0.1.5	zlib	0.5.3.3
filepath	1.3.0.0	html	1.0.1.2		
haskell2010	1.1.0.1	HTTP	4000.2.3		
haskell98	2.0.0.1	HUnit	1.2.4.2		
hpc	0.5.1.1	mtl	2.1.1	cabal-install	0.14.0
old-locale	1.0.0.4	network	2.3.0.13	alex	3.0.1
old-time	1.1.0.0	OpenGL	2.2.3.1	happy	1.18.9
pretty	1.1.1.0	parallel	3.2.0.2		
process	1.1.0.1	parsec	3.1.2		
template-haskell	2.7.0.0	QuickCheck	2.4.2		

Standard Modules — Ruby 1.9.3

A — abbrev

B — base64, benchmark, bigdecimal

C — cgi, cmath, complex, continuation,
coverage, csv, curses

D — date, dbm, debug, delegate, digest,
dl, drb

E — e2 mmap, English, erb, etc, extmk

F — fcntl, fiber, fiddle, fileutils, find,
forwardable

G — gdbm, generator, getoptlong, gserver

I — iconv, io/wait, ipaddr

J — json

L — logger

M — mathn, matrix, minitest/benchmark,
minitest/mock, minitest/spec,
minitest/unit, mkmf, monitor,
mutex_m

N — net/ftp, net/http, net/imap, net/pop,
net/smtp, net/telnet, nkf

O — observer, open-uri, open3, openssl,
optparse, ostruct

P — parsedate, pathname, pp,
prettyprint, profile, profiler, pstore, pty

R — racc, racc/parser, rational, rdoc,
readline, resolv, resolv-replace, rexml,
rinda, ripper, rss, rubygems

S — scanf, sdbm, securerandom, set,
shell, shellwords, singleton, socket,
stringio, strscan, syck, sync, syslog

T — tempfile, test/unit, thread, thwait,
time, timeout, tk, tmpdir, tracer, tsort

U — un, uri

W — weakref, webrick, Win32API,
win32ole

X — xmlrpc

Y — yaml

Z — zlib

Standard Modules – PHP 5.4.6

Affecting PHP's Behaviour — APC, APD, bcompiler, Error Handling, htscanner, inclued, Memtrack, Output Control, PHP Options/Info, runkit, scream, Weakref, WinCache, Xhprof

Audio Formats Manipulation — ID3, KTaglib, oggvorbis, OpenAL

Authentication Services — KADM5, Radius

Date and Time Related Extensions — Calendar, Date/Time

Command Line Specific Extensions — Ncurses, Newt, Readline

Compression and Archive Extensions — Bzip2, LZF, Phar, Rar, Zip, Zlib

Credit Card Processing — MCVE, SPPLUS

Cryptography Extensions — Crack, Hash, Mcrypt, Mhash, OpenSSL

Database Extensions — Abstraction Layers, Vendor Specific Database Extensions

File System Related Extensions — Direct IO, Directories, Fileinfo, Filesystem, Inotify, Mimetype, Proctitle, xattr, xdiff

Human Language and Character Encoding Support — Enchant, FriBiDi, Gender, Gettext, iconv, intl, Multibyte String, Pspell, Recode

Image Processing and Generation — Cairo, Exif, GD, Gmagick, ImageMagick

Mail Related Extensions — Cyrus, IMAP, Mail, Mailparse, vpopmail

Mathematical Extensions — BC Math, GMP, Lapack, Math, Statistics, Trader

Non-Text MIME Output — FDF, GnuPG, haru, Ming, PDF, PS, RPM Reader, SWF

Process Control Extensions — Eio, Expect, Libevent, PCNTL, POSIX, Program execution, Semaphore, Shared Memory

Other Basic Extensions — GeolP, JSON, Judy, Lua, Misc., Parsekit, SPL, SPL Types, Streams, Tidy, Tokenizer, URLs, V8js, Yaml, Yaf, Taint

Other Services — AMQP, chdb, cURL, FAM, FTP, Gearman, Gopher, Gupnp, HTTP, Hyperwave, Hyperwave API, Java, LDAP, Lotus Notes, Memcache, Memcached, mqseries, Network, RRD, SAM, SNMP, Sockets, SSH2, Stomp, SVM, SVN, TCP, Varnish, YAZ, YP/NIS

Search Engine Extensions — mnoGoSearch, Solr, Sphinx, Swish

Server Specific Extensions — Apache, IIS, NSAPI

Session Extensions — Msession, Sessions, Session PgSQL

Text Processing — BBCode, PCRE, POSIX Regex, ssdeep, Strings

Variable and Type Related Extensions — Arrays, Classes/Objects, Classkit, Ctype, Filter, Function Handling, Object Aggregation, Quickhash, Reflection, Variable handling

Web Services — OAuth, SCA, SOAP, X.commerce, XML-RPC

Windows Only Extensions — .NET, COM, Printer, W32api, win32ps, win32service

XML Manipulation — DOM, libxml, qtdom, SDO, SDO-DAS-Relational, SDO DAS XML, SimpleXML, WDDX, XML Parser, XMLReader, XMLWriter, XSL, XSLT (PHP 4)

Standard Modules – Python 3.2

String Services — string, re, struct, difflib, textwrap, codecs, unicodedata, stringprep

Data Types — datetime, calendar, collections, heapq, bisect, array, sched, queue, weakref, types, copy, pprint, reprlib

Numeric and Mathematical Modules — numbers, math, cmath, decimal, fractions, random

Functional Programming Modules — itertools, functools, operator

File and Directory Access — os.path, fileinput, stat, filecmp, tempfile, glob, fnmatch, linecache, shutil, macpath

Data Persistence — pickle, copyreg, shelve, marshal, dbm, sqlite3

Data Compression and Archiving — zlib, gzip, bz2, zipfile, tarfile

File Formats — csv, configparser, netrc, xdrlib, plistlib

Cryptographic Services — hashlib, hmac

Generic Operating System Services — os, io, time, argparse, optparse, getopt, logging, logging.config, logging.handlers, getpass, curses, curses.textpad, curses.ascii, curses.panel, platform, errno, ctypes

Optional Operating System Services — select, threading, multiprocessing, concurrent.futures, mmap, readline, rlcompleter, dummy_threading, _thread, _dummy_thread

Interprocess Communication and Networking — subprocess, socket, ssl, signal, asyncore, asynchat

Internet Data Handling — email, json, mailcap, mailbox, mimetypes, base64, binhex, binascii, quopri, uu

Structured Markup Processing Tools — html, html.parser, html.entities, xml.etree.ElementTree, xml.dom, xml.dom.minidom, xml.dom.pulldom, xml.sax, xml.sax.handler, xml.sax.saxutils, xml.sax.xmlreader, xml.parsers.expat

Internet Protocols and Support — webbrowser, cgi, cgitb, wsgiref, urllib.request, urllib.response, urllib.parse, urllib.error, urllib.robotparser, http.client, ftplib, poplib, imaplib, nntplib, smtplib, smtpd, telnetlib, uuid, socketserver, http.server, http.cookies, http.cookiejar, xmlrpc.client, xmlrpc.server

Multimedia Services — audioop, aifc, sunau, wave, chunk, colorsys, imghdr, sndhdr, ossaudiodev

Internationalization — gettext, locale

Program Frameworks — turtle, cmd, shlex

Graphical User Interfaces with Tk — tkinter, tkinter.ttk, tkinter.tix, tkinter.scrolledtext, IDLE, Other Graphical User Interface Packages

Development Tools — pydoc, doctest, unittest, 2to3 - Automated Python 2 to 3 code translation, test, test.support

Debugging and Profiling — bdb, pdb, The Python Profilers, timeit, trace

Python Runtime Services — sys, sysconfig, builtins, __main__, warnings, contextlib, abc, atexit, traceback, __future__, gc, inspect, site, fpectl, distutils

Custom Python Interpreters — code, codeop

Importing Modules — imp, zipimport, pkgutil, modulefinder, runpy, importlib – An implementation of import

Python Language Services — parser, ast, symtable, symbol, token, keyword, tokenize, tabnanny, pyclbr, py_compile, compileall, dis, pickletools

Miscellaneous Services — formatter

MS Windows Specific Services — msilib, msvcrt – Useful routines from the MS VC++ runtime, winreg – Windows registry access, winsound

Unix Specific Services — posix, pwd, spwd, grp, crypt, termios, tty, pty, fcntl, pipes, resource, nis, syslog

Standard Modules — Java SE 7

java.applet

java.awt — color, datatransfer, dnd, event, font, geom, im, im.spi, image, image.renderable, print

java.beans — beancontext

java.io

java.lang — annotation, instrument, invoke, management, ref, reflect

java.math

java.net

java.nio — channels, channels.spi, charset, charset.spi, file, file.attribute, file.spi

java.rmi — activation, dgc, registry, server

java.security — acl, cert, interfaces, spec

java.sql

java.text — spi

java.util — concurrent, concurrent.atomic, concurrent.locks, jar, logging, prefs, regex, spi, zip

javax.accessibility

javax.activation

javax.activity

javax.annotation — processing

javax.crypto — interfaces, spec

javax.imageio — event, metadata, plugins.bmp, plugins.jpeg, spi, stream

javax.jws — soap

javax.lang.model — element, type, util

javax.management — loading, modelmbean, monitor, openmbean, relation, remote, remote.rmi, timer

javax.naming — directory, event, ldap, spi

javax.net — ssl

javax.print — attribute, attribute.standard, event

javax.rmi — CORBA, ssl

javax.script

javax.security — auth, auth.callback, auth.kerberos, auth.login, auth.spi, auth.x500, cert, sasl

javax.sound.midi — spi

javax.sound.sampled — spi

javax.sql — rowset, rowset.serial, rowset.spi

javax.swing — border, colorchooser, event, filechooser, plaf, plaf.basic, plaf.metal, plaf.multi, plaf.nimbus, plaf.synth, table, text, text.html, text.html.parser, text.rtf, tree, undo

javax.tools

javax.transaction — xa

javax.xml — bind, bind.annotation, bind.annotation.adapters, bind.attachment, bind.helpers, bind.util, crypto, crypto.dom, crypto.dsig, crypto.dsig.dom, crypto.dsig.keyinfo, crypto.dsig.spec, datatype, namespace, parsers, soap, stream, stream.events, stream.util, transform, transform.dom, transform.sax, transform.stax, transform.stream, validation, ws, ws.handler, ws.handler.soap, ws.http, ws.soap, ws.spi, ws.spi.http, ws.wsaddressing, xpath

org.ietf.jgss

org.omg — CORBA, CORBA_2_3, CORBA_2_3.portable, CORBA.DynAnyPackage, CORBA.ORBPackage, CORBA.portable, CORBA.TypeCodePackage, CosNaming, CosNaming.NamingContextExtPackage, CosNaming.NamingContextPackage, Dynamic, DynamicAny, DynamicAny.DynAnyFactoryPackage, DynamicAny.DynAnyPackage, IOP, IOP.CodecFactoryPackage, IOP.CodecPackage, Messaging, PortableInterceptor, PortableInterceptor.ORBInitInfoPackage, PortableServer, PortableServer.CurrentPackage, PortableServer.POAManagerPackage, PortableServer.POAPackage, PortableServer.portable, PortableServer.ServantLocatorPackage, SendingContext, stub.java.rmi

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org.xml.sax — ext, helpers

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org.xml.sax — ext, helpers

org.omg

What's Missing?

crypto — crypt, hash, ssl, uuid

data — marshal, pickle

formats — base64, csv, json, yaml, mime, mailbox, pdf, swf, tarfile

database — dbm, *sql, sqlite

encoding — base64, binhex, quopri, uu

image processing — cairo, imagemagick

math — statistics

media — id3, midi, exif, ogg vorbis, openal

network — ftp, imap, nntp, oauth, pop, soap, smtp, telnet, xmlrpc

os services — curses, logging

services — amqp, curl, memcached, sessions

text — tokenization, urls

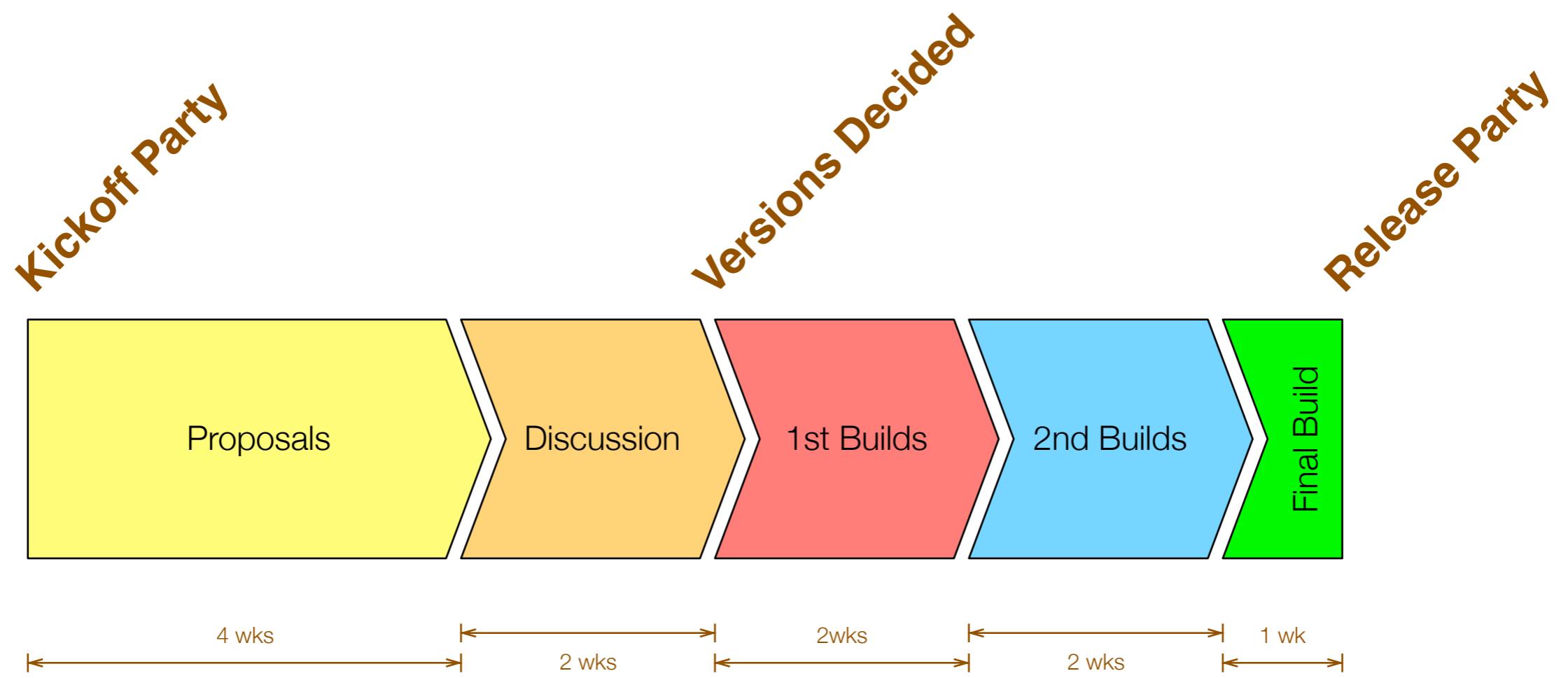
ui — *

xml — *

Process



Schedule



Production Problems

Build is an unholy mix of
make, shell, haskell, & cabal

How the different builds relate is... unknown

Clear, reproducible instructions are missing

How GHC fits in is... interesting

Process Problems

Contacting Maintainers

So many lists....

Proposals

Trac

When to Release?

Predictable
release times



Latest
versions &
features

Goals



Original Aims

... a set of default libraries that implement common functionality, conveniently packaged for [each] operating system

... a set of dependencies which [...] can [...] be widely deployed and work on all major operating systems

... [a set of] packages to include when providing Haskell support for an operating system

Target Users

Programmers new to Haskell

Programmers not focused on Haskell

Package creators

Production

Aims Redux

A set of libraries that:

- have broad, common coverage
- work cross-platform (as much as possible)

A versioned release that:

- provides reliable stability
- serves as reference points for testing
- is distribution ready

Guiding Principles

No surprises

- **stability** over time
- releases that **just work**

Make reasonable choices

- pick well-used packages w/**active support**
- don't let perfect be the enemy of **good**

Make programmer's lives **easier**

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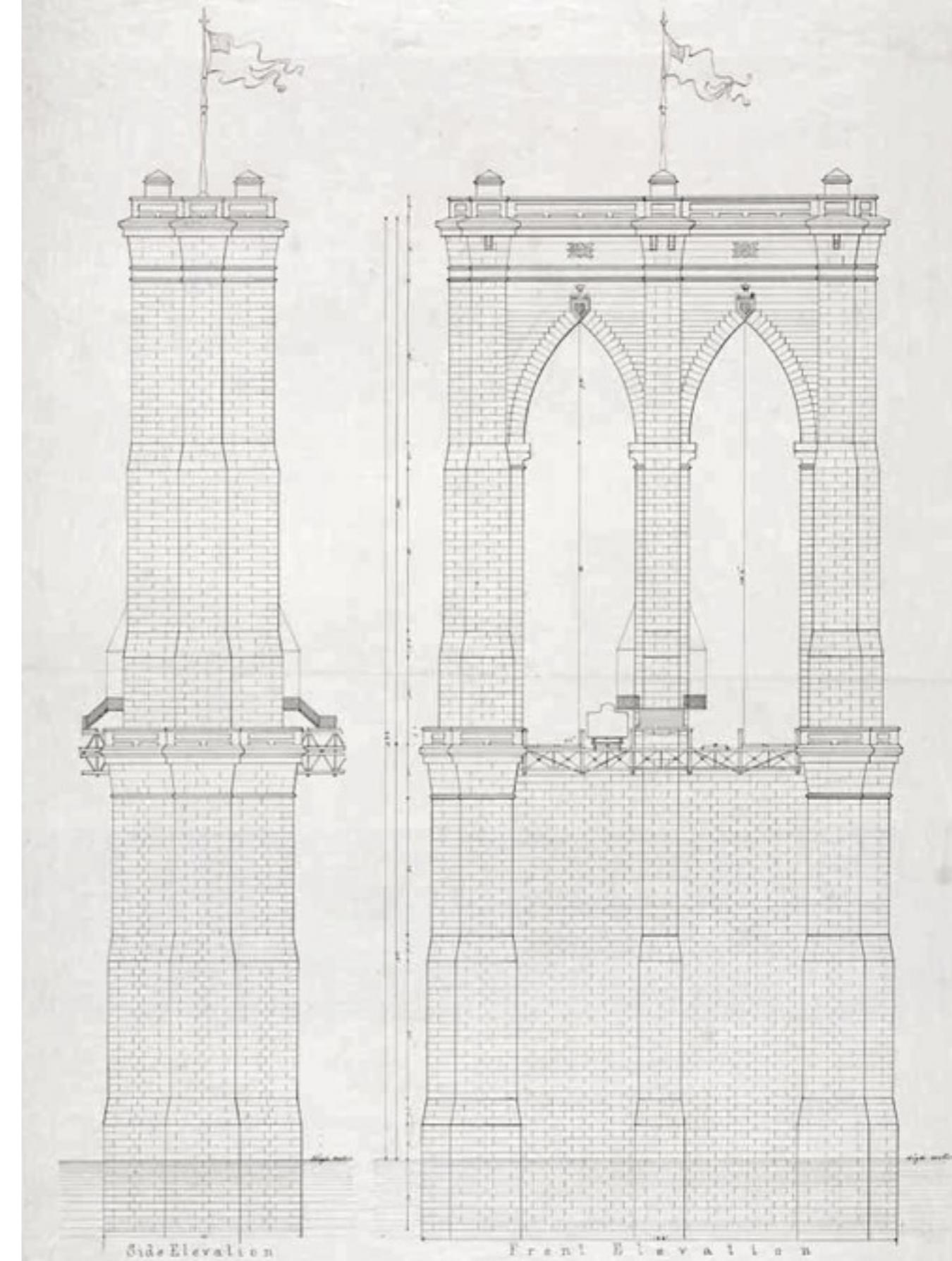
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Make programmer's lives **easier**

Plans



East River Bridge.

Plan of one Tower

What we need next

Better proposal process

Active Involvement of Package Maintainers

Better build process

Mark's worry closet

OpenGL consensus

Hackage security

Safe Haskell

GHC Stability



Let's Build It!

Mark Lentczner
mzero@google.com



Let's Build It!

Mark Lentczner
mzero@google.com

Photo Credits

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Construction of Memorial Bridge by Theodor Horydczak, ca. 1920

— <http://www.loc.gov/pictures/item/thc1995001571/PP/>

View from second floor platform looking up at subsequent platforms by James W. Rosenthal, 2007

— <http://www.loc.gov/pictures/item/al1194.photos.226334p/>

Train wreck on Maricopa and Phoenix Railroad by unknown, 1902

— <http://www.loc.gov/pictures/item/az0253.photos.009565p/>

Platform 9 3/4, Kings Cross Station by Robin Stevens, 2006

— <http://www.cynic.org.uk/photos/London/index2.html>

Plan of One Tower for the East River Bridge, 1867 by War Department. Office of the Chief of Engineers, 1867

— <http://arcweb.archives.gov/arc/action/ExternalIdSearch?id=594709>

Gina oil platform by Erik Nielsen, 2008

— <http://www.flickr.com/photos/24542697@N00/2819251699>