How APIs, Standards, and Customers Drive Software Genres into Open Source

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Two Models: Cathedral and Bazaar
Autodesk is a Cathedral?
“Cathedral”

Webster says:

“The principal church in a diocese, so called because in it the bishop has his official chair (Cathedra) or throne. “
Our Bishop?
Successful closed source – The Cathedral
Successful open source – The Bazaar

OSGeo.org
The Open Source Geospatial Foundation
The Geospatial Bazaar
What causes migration of a Company & its Code base from Closed to Open Source?
Core

Context

DEALING WITH DARWIN
HOW GREAT COMPANIES INNOVATE AT EVERY PHASE OF THEIR EVOLUTION

GEOFFREY A. MOORE

Gary Lang - OSGeo Treasurer, MapGuide Project

Open Source Geospatial Foundation
Standards Facilitate, drive migration

- POSIX, Unix culture -> Linux
- HTTP -> Apache
- SQL, ODBC, OGIS -> PostGIS
- GML, WMS, WFS -> MapServer
What About Geospatial standards?

- Geospatial was a latecomer to IT and many of the standards associated with modern IT
  - GIS used to be highly proprietary.
  - In 2005/2006 geospatial joined the mainstream.
  - Thanks to Google for generating the interest
- Geospatial is adopting standards by extending IT standards
  - SQL -> SQL/MM
  - XML -> GML
  - Web services: -> WMS, WFS, WCS, etc.
- Exceptions
  - GRASS has been here for a long time
Open Source Geospatial Software

- A “quiet secret”, rapidly matured.

- MapServer is the number 2 web mapping application estimate 30K – 50K.

- Other examples: PostGIS, GeoTools, GRASS, etc.
Geospatial Open Source Interest – B.G.
Then came Google Maps
AND Google Earth Brings “Mirror Worlds” to the Masses
Mirror Worlds

“Imagine looking at your computer screen and seeing reality – an image of your city, for instance, complete with moving traffic patterns, or a picture that sketches the state of an entire corporation at this second…. These will soon be available to anyone.

David Gelernter 1991 “Mirror Worlds”

http://tinyurl.com/rpn2h
Open APIs

But...

Google Maps API

Google Maps API Version 2 Reference

If you only want to use the map to display your content, then you need to know these classes, types, and functions:

- GMap2
- GMapOptions
- GMapWindow
- GMapWindowTab
- GMapWindowOptions
- GMarker
- GMapInfoWindow
- GMapInfoWindowOptions
- GMapOverlay
- GOverlayTree
- GOverlay
- GEvent
- GEventListener
- GImageMap
- GImage
- GMarker
- GMarkerMap
- GMarkerEvent
- GMarkerEventMap
- GMarkerEventEvent
- GMarkerEventEventMap

If you want to extend the functionality of the maps API by implementing your own controls, overlays, or map types, then you also need to know these classes and types:

- GMapPanel
- GOverlay
- GControl
- GControlPosition
- GMapType
- GMapTypeOptions
- GTileLayer

class GMap2

URL Construction

Most API requests are one GET. If the specific documentation requires POST, see the section on "POST URL Construction" below.

All search request URLs start with the hostname and resemble the following sample:

http://api.search.yahoo.com

The hostname are the service name and version number:

/websearch/service/12/

Next is the method followed by a question mark:

/websearch/

These components form the basic URL:

http://api.search.yahoo.com/WebSearchService/12/websearch?

The method is followed by the actual query parameters, which take the form argument=value, where the arguments and values are url encoded. Multiple parameters are separated by an ampersand (&). The following example searches the web database for PDF files containing the term "finance":

http://api.search.yahoo.com/WebSearchService/12/websearch?appid=yahoosearch&financetext=finance
Open Source Geospatial Foundation

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Hate MSFT

Love Google Labs

Yahoo Joins In

Mashups!
Geospatial Open Source Interest – A.G.
Open Source Geospatial Software and Standards

- Standard APIs have facilitated growth.
- Open web services including OGC WMS, WFS,
  - MapServer, Mapbender
- OGC Simple feature spec for SQL (SFS)
  - PostGIS/PostgreSQL
  - MySQL/MySAM spatial
Geospatial Open Source Takes Off
Autodesk goes Open Source

- Why we did it
  - Our users wanted it (we’re too slow)
  - It makes business sense for MapGuide
  - It makes business sense for Map
  - It makes business sense for Topobase.
Standard APIs created commodization opportunities for web mapping

- Drives closed source genres into open source genres
- Context (commoditization) is fertile ground for open source
- Standard APIs are closely associated with context, and move software genres into context from core.
- As standard geospatial APIs emerge (ISO, OGC, Google Maps 2.0,..) open source geospatial will become more ubiquitous.
Questions?
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