

# GeoServer and GML

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# GeoServer

- Open Source Standards-based Geospatial Server
- Closing in on 1 million total downloads
  - (includes plugins)
- Reference Implementation for WFS 1.0, 1.1, WCS 1.1.
- Implements WMS 1.1.1, 1.3, WFS 2.0, KML, SLD

# GeoServer GML Implementation

- GML Versions 2.1.2, 3.1.1, 3.2
- Out of the box only supports Simple Features Level 0
- 98% of users don't care for more
  - GS 2.0.0 and above has 250,000+ downloads
  - App-Schema plugin (2.0.0+) has 5,037
    - Needed for simple features level 1+ and any community profiles

# What works

- Older versions
  - Takes years for client implementations to catch up, as they first need servers to test
- Used for WFS Editing of flat features
- Custom parsers for community profiles?
  - I believe it's useful for this, don't know users who are doing custom parsers / applications

# What doesn't work

- New versions of spec before old has settled
- Generic GML parsing from schemas is hard
  - Still no parser for complex schemas in GeoTools or OGR
  - No good tools in any language to do meta-parsing until years after GML 3
- Huge size of spec, lack of good introduction
- Bulky size, no well adopted binary version

# Issues with Current Version

- Hasn't been around long enough for adoption, upgrade was too quick
- Lack of documentation and examples for users and general web implementors
  - First step is to define application schema?
  - Worth spending lots of time/money on
    - Difference in success of open source projects is docs
    - Can't just rely on community

# Recommendations

- Stop releasing new versions
  - 98% of our users aren't interested
- Focus on documentation, examples, and simple application schemas
- Handle new requirements in JSON and Binary formats
  - Users want efficient and understandable ways to transfer their geo data.

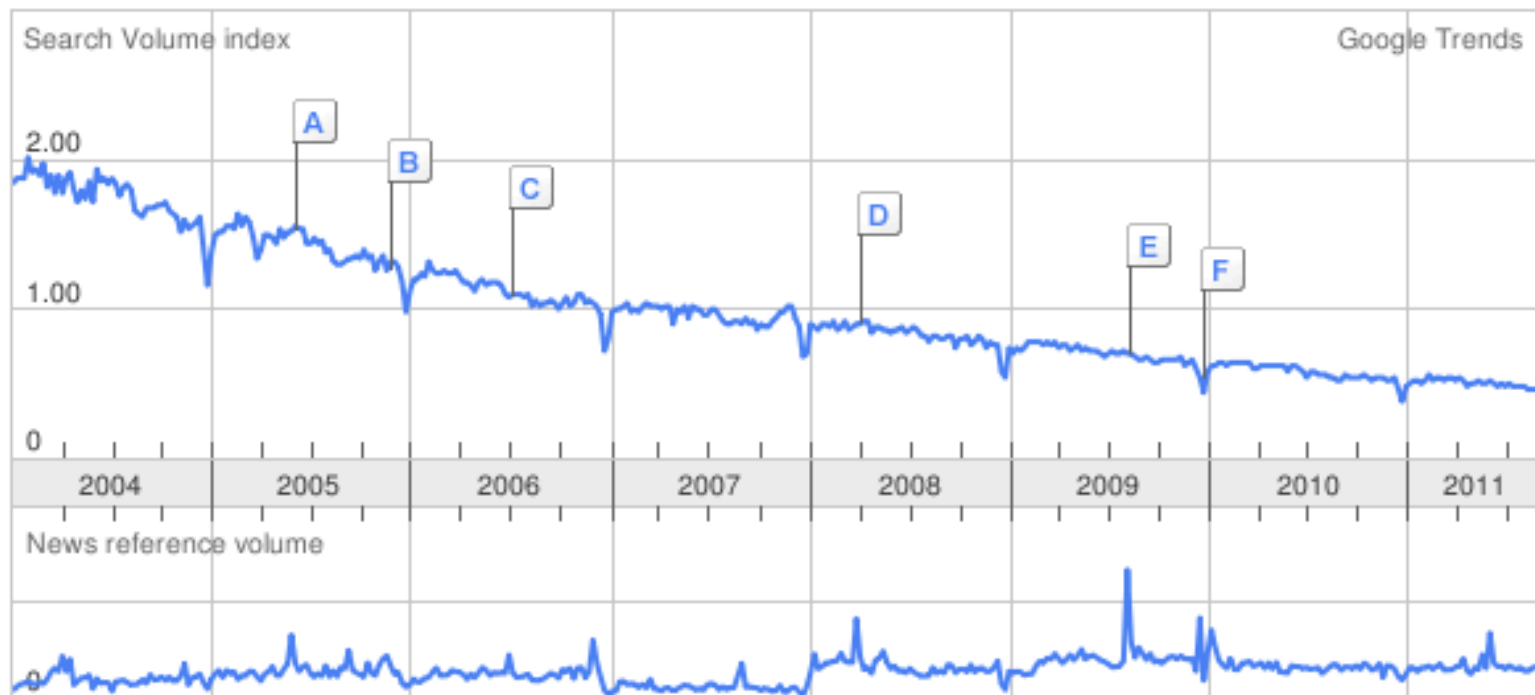
Tip: Use commas to compare multiple search terms.

**Searches** [Websites](#)

- Scale is based on the average worldwide traffic of [xml](#) in all years. [Learn more](#)
- An improvement to our geographical assignment was applied retroactively from 1/1/2011. [Learn more](#)

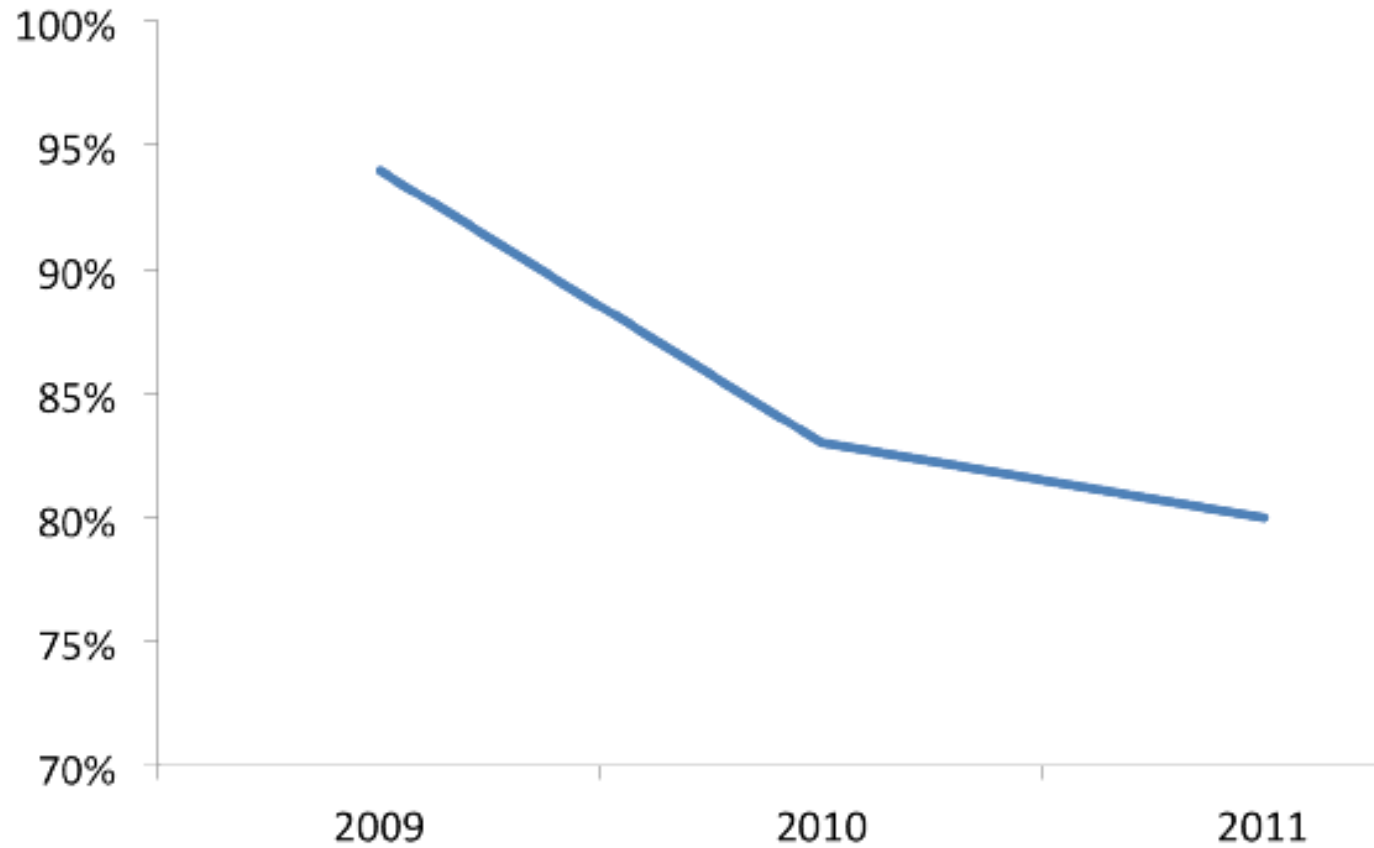
xml

1.00





From Programmable Web, which tracks all web API's

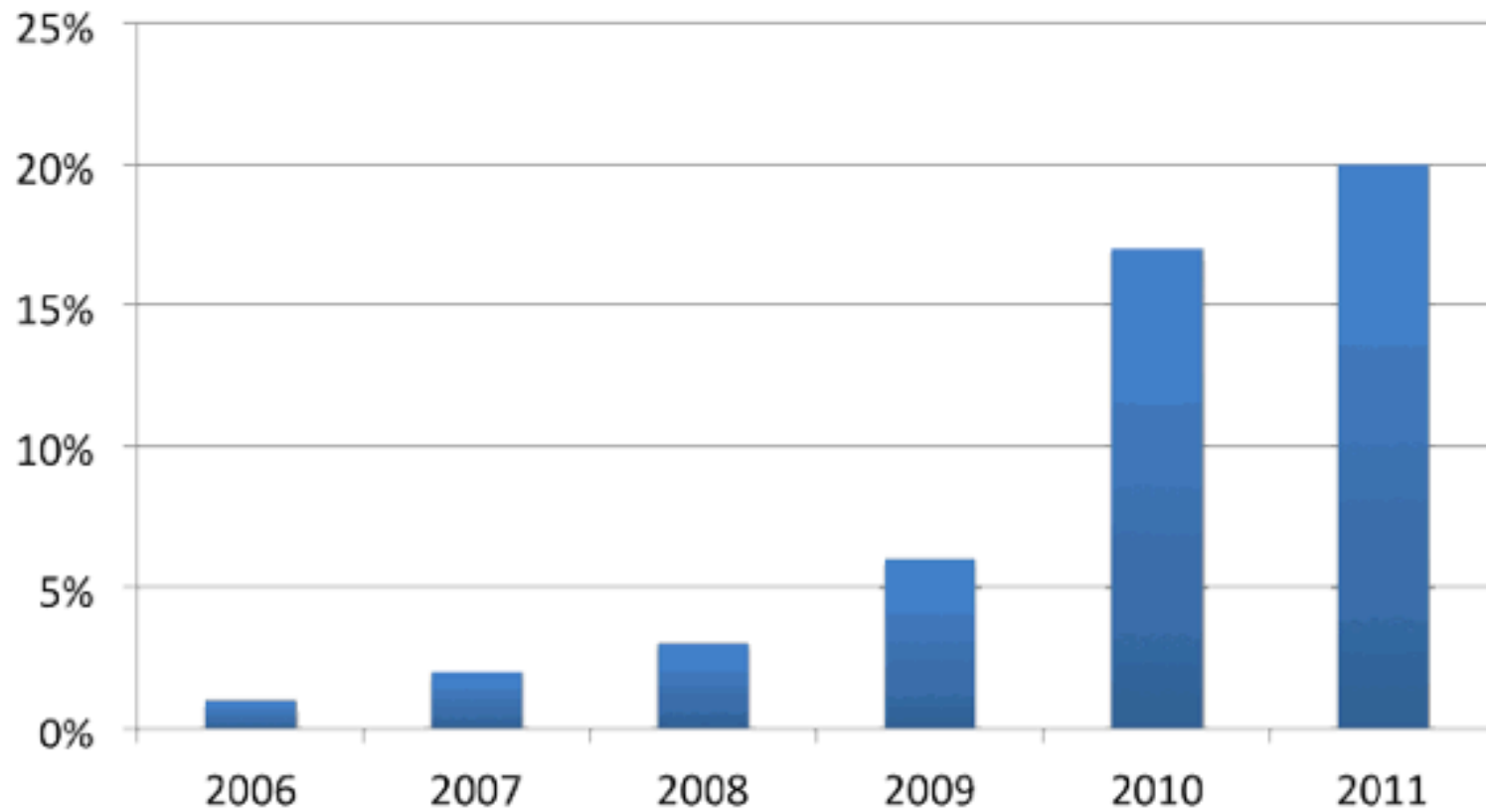


*Percentage of APIs with XML support*



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*Percentage of new APIs with **only** JSON support*



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# Binary formats

- Shapefile is still format of choice for most
  - File GeoDataBase, KMZ
- An open, compact, fast, easily parseable format to represent data would be a win
  - Implementations in every programming language would help adoption

# Binary options

- Super fast web serialization
  - Protobuf, Thrift, Avro, Smile, Protostuff
    - Data serialization with bindings in lots of languages
    - Used for majority of internal calls at Google, FB, Twitter
- Compact, Single File, Relational DB
  - SQLite / SpatiaLite
  - Supported by every language and browser

# JSON

- GeoJSON already established - 90% use case
- Leverage great OGC knowledge of information communities
  - Help implement JSON profiles, without having to deal with all the 'cruft' (xml:id, xlink, etc)
  - Extend GeoJSON, but all the normal parsers will already work, put in to objects with no add'l work

# GML 4

- Let GML 3 be the last one
  - Let tools catch up to enjoy a long, stable life
- Steer new use requirements to Binary and JSON formats
  - Make sure new application schemas can be easily parsed by existing standard libraries in to objects
  - Follow wider tech trends, lead geo community