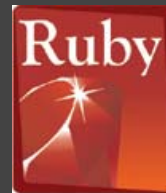


# Apache Thrift

Library and tools  
for language-independent  
remote procedure calls

# Communication between languages

- We now do this via CCSDS, which has advantages and disadvantages
- Remote procedure calls
- Combination of library and tools that generate code
- From the people of Facebook
- Open solution
- Circa 15 supported languages, with focus on: C++, Java, Python, Ruby and PHP



# Focus on simplicity

- Generation of simple code instead of complex library with lots of dynamic behaviour
- Definition of variables and functions in a textfile with C-like syntax
- Base types: bool, int (different sizes), double, string
- Plus: struct, array, set, hashmap
- Always use native types, makes coding simple

# Thrift interface definition

- First create a definition:

```
service Calculator {  
    void ping(),  
    void send_msg(1:string msg, 2:i32 addr),  
    i32 add(1:i32 num1, 2:i32 num2),  
}
```

- Run generator
- Then compile client and server code as if the functions exist

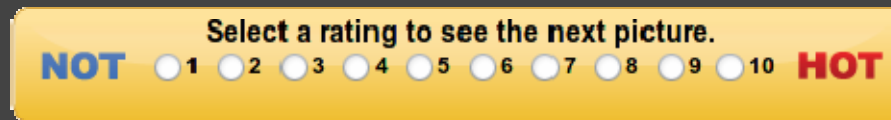
# Transport

- Transport through memory, sockets and files
- Files can be useful for logging, replaying
- Versioning possible, for 'old' servers



# Hot or not?

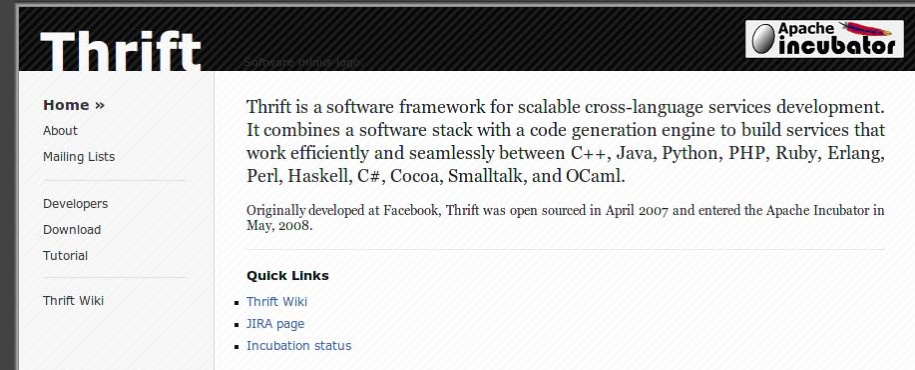
- Not hot?
  - Code generation can give you mounds of garbage code
  - Server threading part has dependency on Boost
  - Complexity added to build procedure
- Hot
  - Good language support
  - Low complexity compared to other solutions like SOAP



# What's it to us?

- We already have our custom protocol over sockets
- For simple things, this could be useful
- Especially with the embedding of scripting languages in our Generic EGSE

<http://thrift.apache.org/>



The screenshot shows the Thrift project website. The header features the Thrift logo and the Apache Incubator logo. The main content area includes a navigation menu on the left with links for Home, About, Mailing Lists, Developers, Download, Tutorial, and Thrift Wiki. The main text describes Thrift as a software framework for scalable cross-language services development, combining a software stack with a code generation engine. It lists supported languages: C++, Java, Python, PHP, Ruby, Erlang, Perl, Haskell, C#, Cocoa, Smalltalk, and OCaml. A 'Quick Links' section provides links to the Thrift Wiki, JIRA page, and Incubation status.

**Thrift**

Apache Incubator

**Home »**

- About
- Mailing Lists
- Developers
- Download
- Tutorial
- Thrift Wiki

Thrift is a software framework for scalable cross-language services development. It combines a software stack with a code generation engine to build services that work efficiently and seamlessly between C++, Java, Python, PHP, Ruby, Erlang, Perl, Haskell, C#, Cocoa, Smalltalk, and OCaml.

Originally developed at Facebook, Thrift was open sourced in April 2007 and entered the Apache Incubator in May, 2008.

**Quick Links**

- Thrift Wiki
- JIRA page
- Incubation status