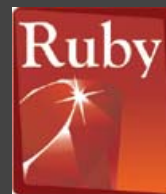


Apache Thrift

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

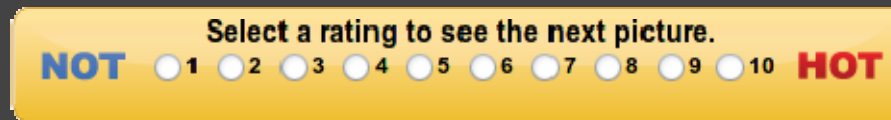
Transport

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



Hot or not?

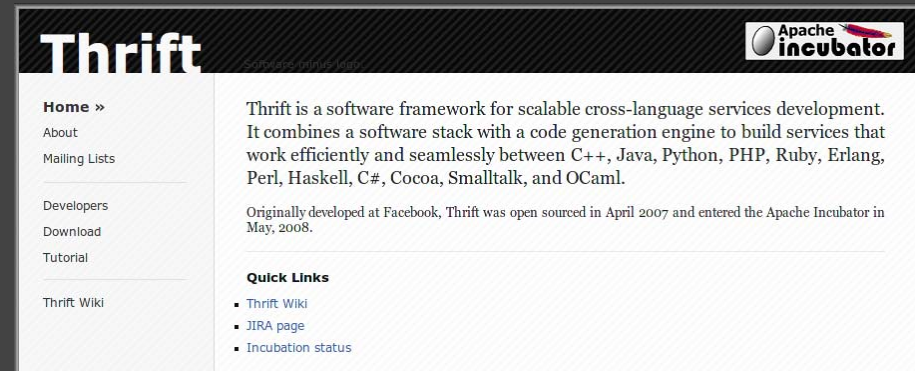
- Not hot?
 - Code generation can give you mounds of garbage code
 - Server threading part has dependency on Boost
 - Complexity added to build procedure
- Hot
 - Good language support
 - Low complexity compared to other solutions like SOAP



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/>

A screenshot of the Thrift project website. The header features the "Thrift" logo in large white letters on a dark background, with "Software Framework" in smaller text below it. To the right is the "Apache incubator" logo. A left sidebar contains a navigation menu with links: "Home »", "About", "Mailing Lists", "Developers", "Download", "Tutorial", and "Thrift Wiki". The main content area has a paragraph describing 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. Below this is a "Quick Links" section with three items: "Thrift Wiki", "JIRA page", and "Incubation status".

Thrift Software Framework

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](#)