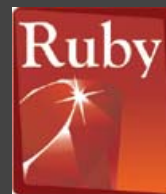# Apache Thrift

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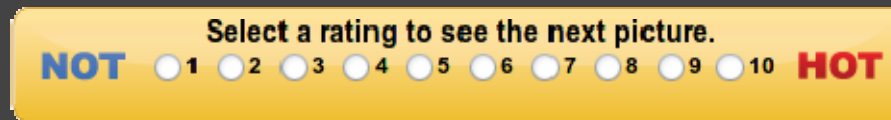- Then compile client and server code as if the functions exist

Transport

- Transport through memory, sockets and files
- Files can be useful for logging, replaying
- Versioning possible, for 'old' servers
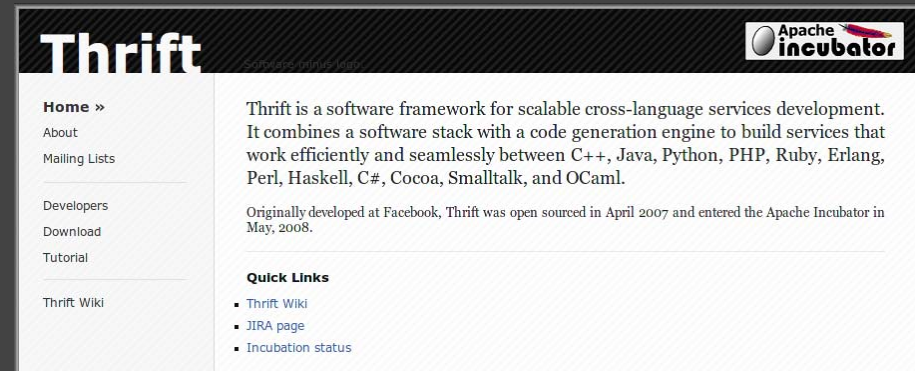
Hot or not?

- 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

Select a rating to see the next picture.

NOT ○1 ○2 ○3 ○4 ○5 ○6 ○7 ○8 ○9 ○10 **HOT**

SRON

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/