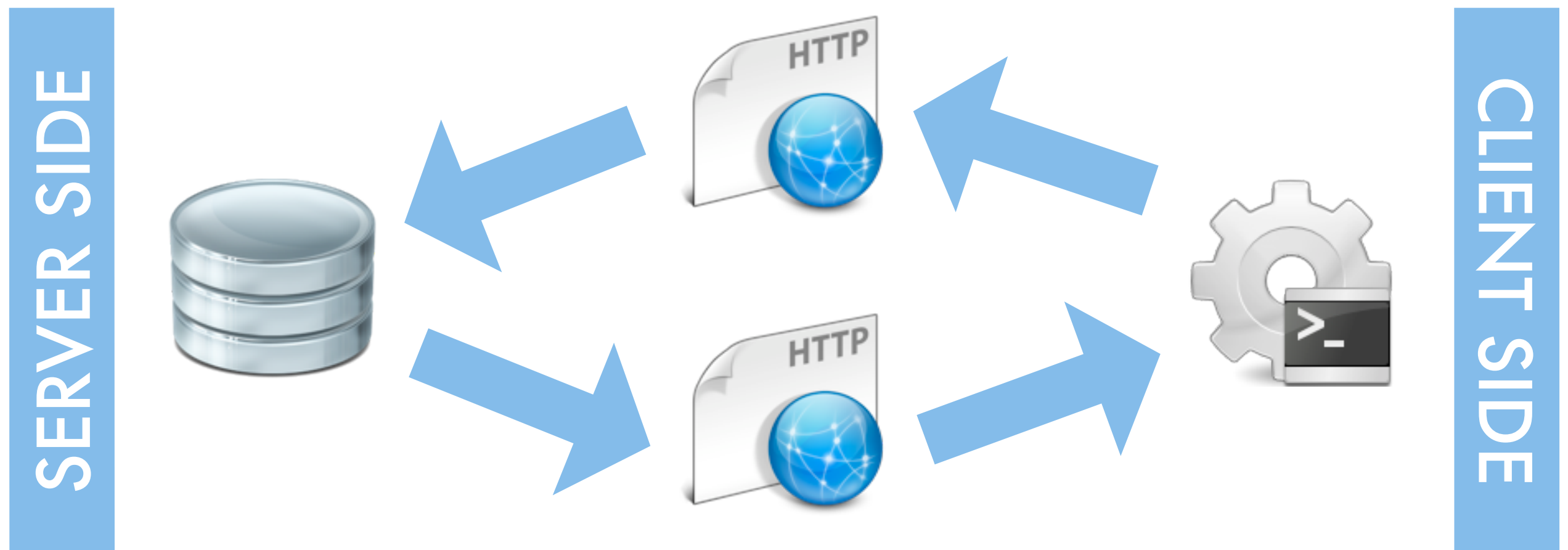


REST Interface

Matteo Manzali

REST Design

- Used to allow communication between a client (Severus or SuperB Ganga plugin) and the Database via http



Old REST

- GET -> select , POST / PUT -> update and insert
- DB and table name are specified into the URL
- In the GET method also fields are into the URL
- In the other methods (POST and PUT) fields's name and value are specified in the body
- <http://phprestsql.sourceforge.net/>

New proposal of REST

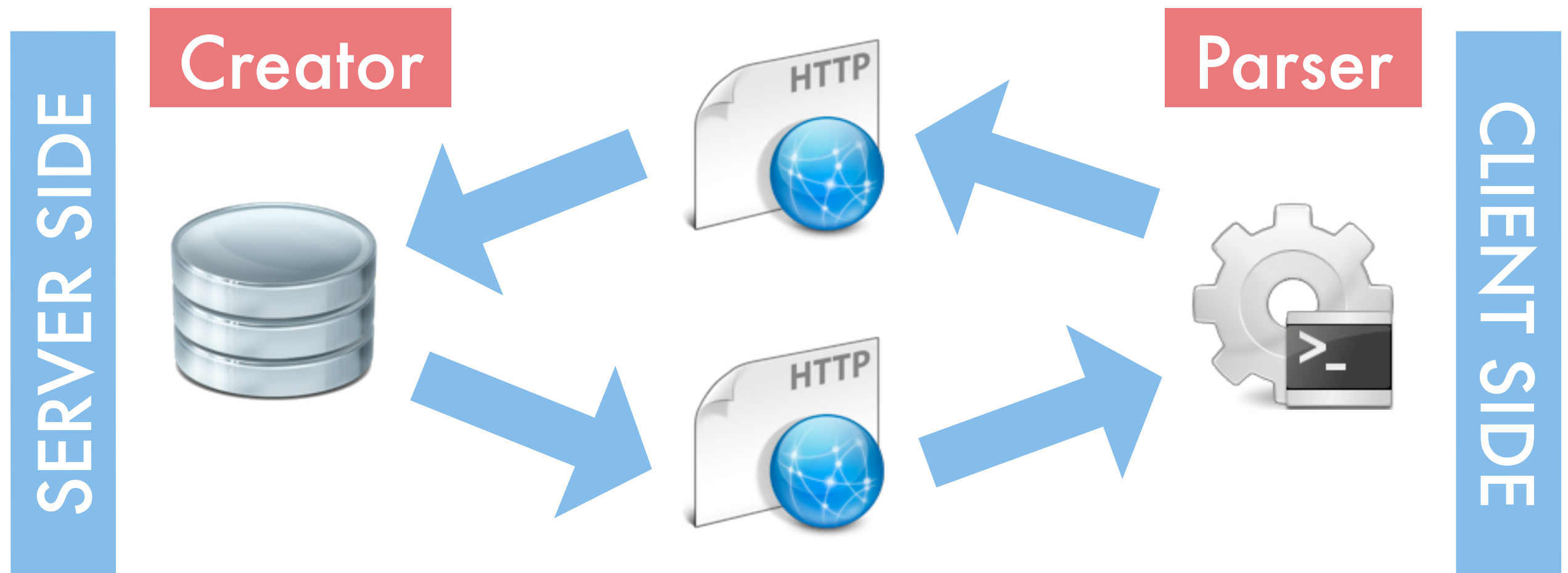
- Composed of two objects: Parser and Creator
- Parser: returns a parsed representation of the query into an associative array with informations about clauses for each statement
- Creator: it's the reverse of Parser, from an associative array returns the SQL query
- <http://code.google.com/p/php-sql-parser/>

- SELECT a
FROM some_table
an_alias
WHERE d > 5

```
Array
(
  [SELECT] => Array
    (
      [0] => Array
        (
          [expr_type] => colref
          [alias] =>
          [base_expr] => a
          [sub_tree] =>
          [position] => 8
        )
      )
    )
  [FROM] => Array
    (
      [0] => Array
        (
          [expr_type] => table
          [table] => some_table
          [alias] => Array
            (
              [as] =>
              [name] => an_alias
              [base_expr] => an_alias
              [position] => 29
            )
          [join_type] => JOIN
          [ref_type] =>
          [ref_clause] =>
          [base_expr] => some_table an_alias
          [sub_tree] =>
          [position] => 18
        )
      )
    )
  continue...
```

New proposal of REST

- The Parser-Creator mechanism is used only from client to server (only for SQL statements)



New proposal of REST

- POST method is used for all SQL operations
- Three POST parameters:
 - db (provides info about db name)
 - source (provides info about db user)
 - query (contains the **json** of the associative array)

New proposal of REST

- Problem: PHP is not installed in the WNs
- Solution A: we have created a static PHP executable to run PHP scripts “standalone” (it’s about 12MB)
- Solution B: there are a lot of good parsers in Python but no one recognizes SQL language
- Solution C: translate PHP script in Python (there are over 2000 lines of code)