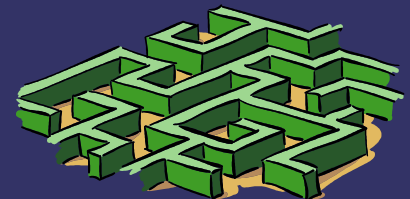


MySQL Proxy

Boston MySQL User Group
Monday, September 24th, 2007

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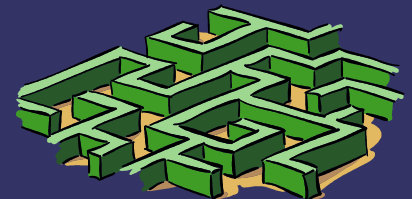


Overview

➔ Architecture

➔ Lua

➔ Examples

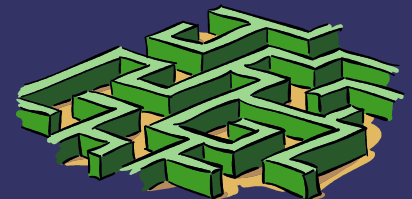


Architecture

⇒ Proxy

⇒ Flexibility lies in simplicity

- Change what's sent
- Change what's received
- Change where it's sent
- Add functionality

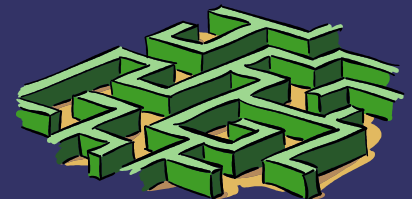


Override Functions

⇒ `read_query()`

⇒ `read_query_result()`

⇒ `connect_server()`

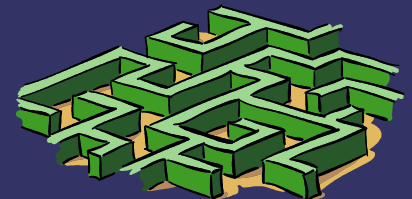


Override Functions (continued)

⇒ `read_handshake()`

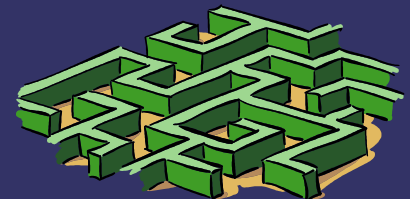
⇒ `read_auth()`

⇒ `read_auth_result()`



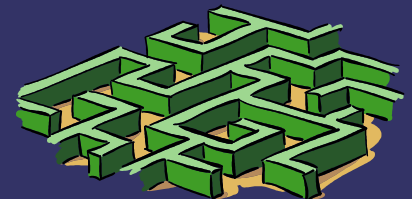
Starting mysql-proxy

- ⇒ Specify lua script
- ⇒ Default
proxy_backend_address=127.0.0.1:3306
- ⇒ Default proxy_address =:4040



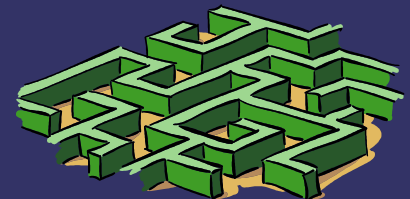
But First, Some Lua!

- ⇒ Fast, small scripting language
- ⇒ Stable, mature
- ⇒ lua.org, lua-users.org



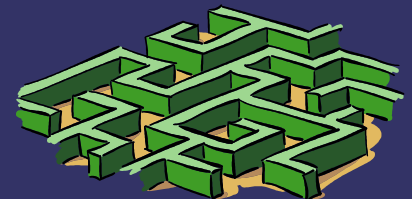
Lua Comments

- ⇒ -- comment, whole or mid-line
- ⇒ --[[a
- ⇒ multi-line
- ⇒ comment --]]
- ⇒ NOT #, // or /* */ !!



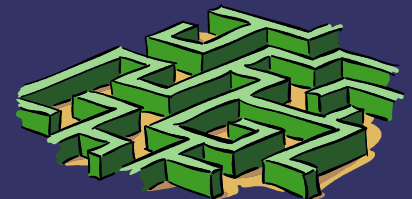
Lua Commands

- ⇒ if ... then ... end statement
- ⇒ == operator
- ⇒ function <name> ([args]) ... end



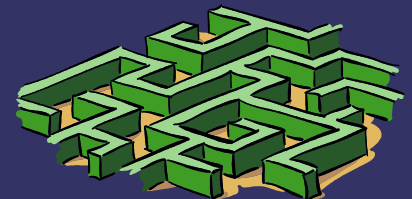
Lua Commands

- ⇒ if ... then ... end statement
- ⇒ == operator
- ⇒ function <name> ([args]) ... end
 - Technically, <name> = function ([args]) ... end



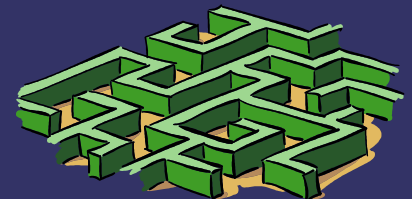
Lua Object Methods

- ⇒ `string:byte([i],[j])`
 - `i` defaults to 1; `j` defaults to `i`
- ⇒ `string:sub(i,[j])`
 - `j` defaults to -1 (length of string)



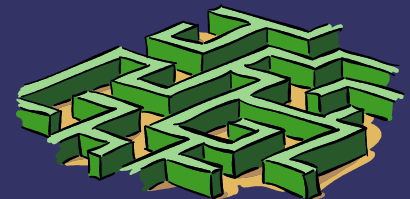
Specific to MySQL Proxy

- ⇒ proxy.COM_QUERY
- ⇒ Finally, the example!



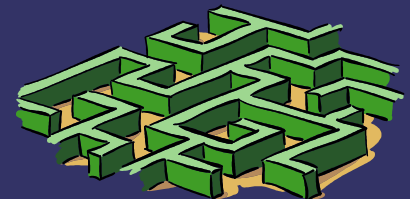
Specific to MySQL Proxy

- ⇒ proxy.COM_QUERY
- ⇒ Finally, the example!
- ⇒ Note: lua script can change on the fly!



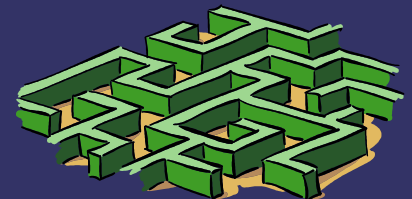
Tokens

- ➔ mysql-proxy 0.6.0 (current)
- ➔ Avoids the need for regular expressions
- ➔ Adds knowledge



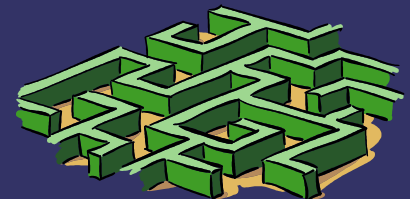
read_query()

- ⇒ Query modification/injection
- ⇒ Query logging
- ⇒ Query redirecting



read_query_result()

- ⇒ Must exist when proxy.PROXY_SEND_QUERY used in read_query()
- ⇒ Monitoring/Auditing
- ⇒ Query redirecting



connect_server()

⇒ proxy.connection

- backend_ndx
- thread_id

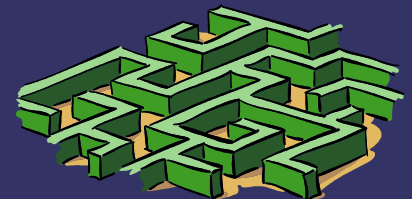
⇒ proxy.servers

- address
- connected_clients
- state



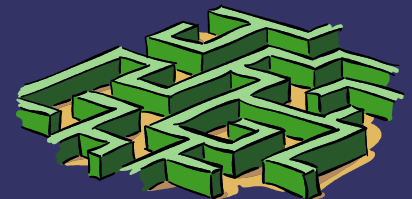
read_handshake()

- ⇒ Server information
- ⇒ `mysqlid_version`
- ⇒ `thread_id`



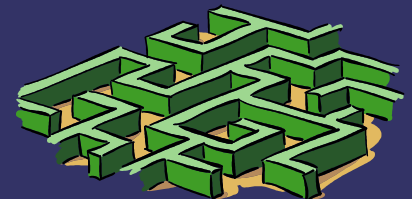
read_handshake()

- ⇒ scramble
- ⇒ server_addr
- ⇒ client_addr



read_auth()

- ⇒ username
- ⇒ password (encrypted, nondeterministic)
- ⇒ default db



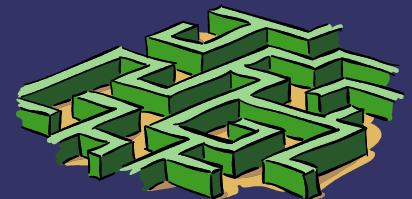
read_auth()

- ⇒ The good stuff!
- ⇒ Can reject logins
- ⇒ Watch the watcher!



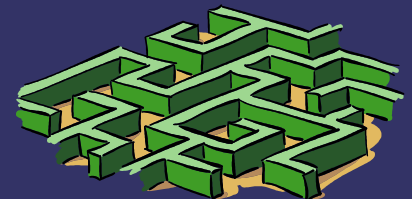
read_auth_result()

- ⇒ OK
- ⇒ Error
- ⇒ Result Packet, not Command Packet



mysql-proxy wish list

- ⇒ Startup scripts
- ⇒ Integration with my.cnf, my.ini config files
- ⇒ HA



Feedback?

→ Other ideas

→ Questions

→ Hackfest!

