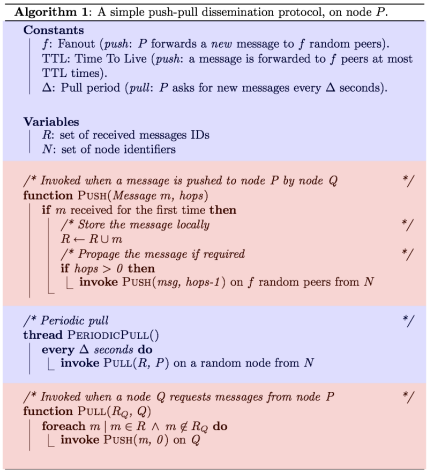
P2P experimentations with SPLAY:

from idea to deployment results in 30 minutes

- SPLAY, integrated system for **developing**, **deploying** and **controlling** distributed systems experiments
  - **Concise** code (similar to pseudo-code) & comprehensive **libraries**
  - **Sandboxing** and secure testbeds management
  - **Resource selection** facilities
  - Cutting edge features: advanced networking, logging, **churn management**, …



Algorithm 1: A simple push-pull dissemination protocol, on node P.

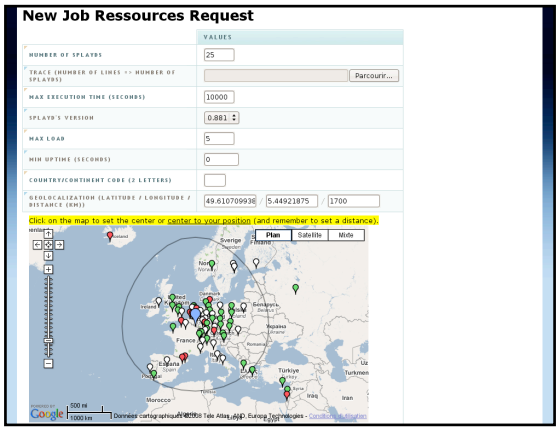
Constants
f: Fanout (*push*: P forwards a *new* message to f random peers).
TTL: Time To Live (*push*: a message is forwarded to f peers at most TTL times).
Δ: Pull period (*pull*: P asks for new messages every Δ seconds).

Variables
R: set of received messages IDs
N: set of node identifiers

```
/* Invoked when a message is pushed to node P by node Q */
function PUSH(Message m, hops)
    if m received for the first time then
        /* Store the message locally */
        R ← R ∪ m
        /* Propage the message if required */
        if hops > 0 then
            invoke PUSH(msg, hops-1) on f random peers from N

/* Periodic pull */
thread PERIODICPULL()
    every Δ seconds do
        invoke PULL(R, P) on a random node from N

/* Invoked when a node Q requests messages from node P */
function PULL(R_Q, Q)
    foreach m | m ∈ R ∧ m ∉ R_Q do
        invoke PUSH(m, 0) on Q
```



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SPLAY PROJECT
distributed applications made simple

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