

# OWG Plan 2012

## Scale out database

The database is currently a single point of failure and a bottleneck which prevents serving the API and website to larger numbers of users. We propose to scale out the load on the database server, initially to one other machine, but later to as many as are needed. This may also involve increasing the number front-end and back-end Rails servers. We currently serve around 4.8 million requests to approximately 120,000 unique IPs per day. Close to 11% of these are API requests, and the rest web requests.

**Goal:** Support a 10x increase in API requests.

**Actions:** Scale out the database. Where appropriate, split database. Spread load over as many machines as possible (e.g: split GPX / “social” stuff onto another machine?).

**Budget:** 3x back-end class machines (~6k each). 2x hemi-smaug class machines (~10k each). plus IC hosting for the above (additional 2.8k annually).

## Tiles

Tile serving from UCL and IC is becoming a nuisance to both providers due to the large number of flows (unique {source IP, source port, dest IP, dest port} tuples) and the co-location of the tile server with the tile cache in London causes high latencies for users elsewhere globally. Commercial CDN solutions are extremely expensive and do not provide the timeliness guarantees and fine-grained control we would want on served tiles. It falls to us to build a CDN which is capable of serving tiles on the scale that we would want. Work has almost finished on the software and configuration for these nodes.

**Goal:** Support a 10x increase in tiles served. Reduce latencies on served tiles outside Europe.

**Actions:** Procure suitable servers (via local chapters?) and integrate them into our tile CDN.

**Budget:** Worst-case, assuming local chapters do not provide, approx: £2,640/yr (USA, reliable-servers.com); £2,950/yr (Singapore, xssist.com).

## Routing

We want to support routing on OSM data for our contributors to find routing errors more quickly and showcase what can be done with OSM. The software for this isn't at a usable stage yet, so it's hard to judge what the hardware requirements will be. At this stage, all the routing solutions require vast amounts of either time or memory (or both) to run, which is incompatible with our goals of updating this service frequently.

**Goal:** Support regularly (daily, at least, preferably minutely) updated routing service.

**Actions:** Determine suitable software solution and procure hardware for it.

**Budget:** Probably at least a hemi-smaug class machine (~£10k)

## Maintenance

**Goal/Action:** Maintain existing services.

**Budget:** £6000/yr for IC server center hosting costs. £2000/yr sundries (replacing failed components, cables, etc...)