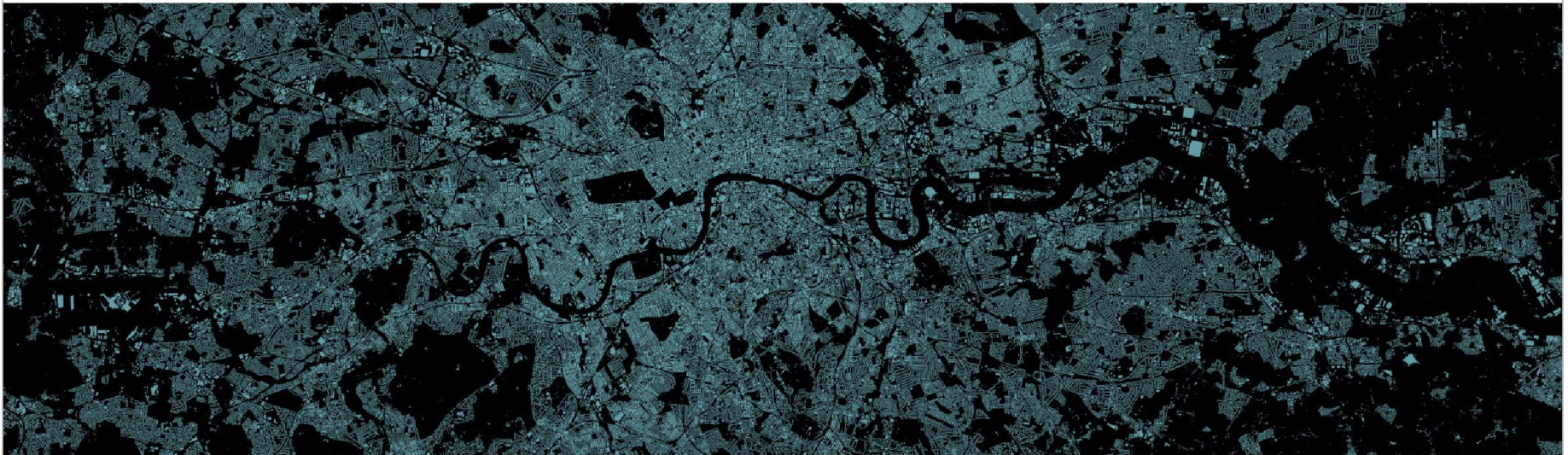


```
SELECT * FROM company, software WHERE name =  
'Ordnance Survey' AND software = 'PostGIS';
```



Tim Martin
Senior GI Consultant
Consultancy and Technical Services
20/11/2014



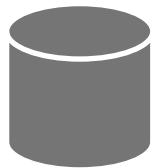
Coming Up...

- How Ordnance Survey uses PostGIS?
- Why does OS use PostGIS?
- How C&TS uses PostGIS
- What I love about PostGIS
- What I find hard with PostGIS
- What could WE do better?

Enterprise IT/GIS



Data



Database



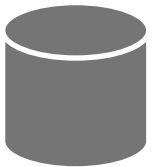
Server



Customers



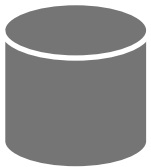
```
SELECT * FROM os.services WHERE name = 'OS OnDemand WMS'
```



```
SELECT * FROM os.services WHERE name = 'OS OnDemand WMTS'
```



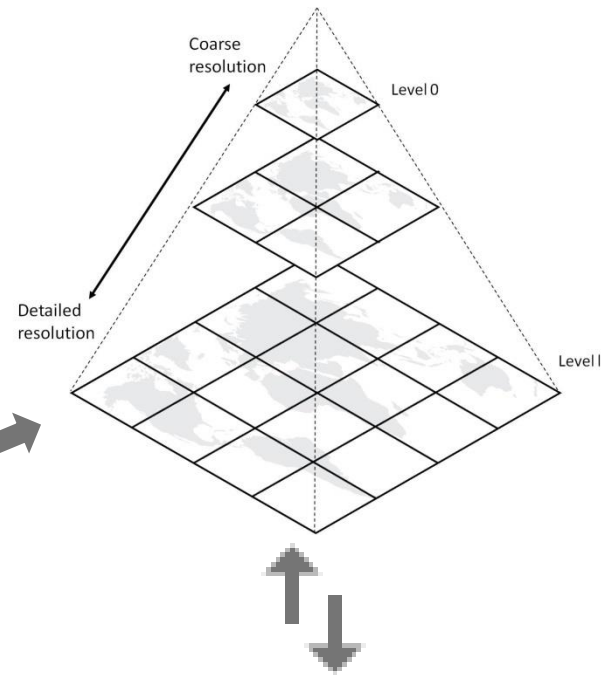
Ordnance
Survey®



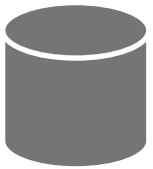
PostGIS



GeoServer



```
SELECT * FROM os.services WHERE name = 'OS Places'
```



```
SELECT * FROM os.businessmodel WHERE opensource = 'True'
```

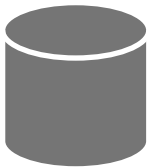
Four simple reasons:

1. Government driving Open Source first
2. Licence/Pricing
3. Performance
4. Accessibility

Additional Drivers:

- Evidence – white papers, examples, case studies
(<http://gis.stackexchange.com/questions/8483/technical-comparison-of-oracle-and-postgresql>)
- Other customers – Government Departments and Commercial Customers
- Other partners – Astun Technology, Atkins and lots of others
- Other respected industry bodies and companies – IGN France, CamptoCamp, MapBox, CartoDB
(<http://postgis.net/2012/10/18/ign>)

```
SELECT * FROM os.teams WHERE name = 'C&TS' OR 'products'
```



ArcGIS®



QUANTUM GIS

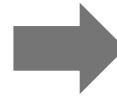
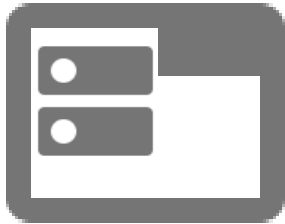


MapInfo
Professional.



OpenLayers™

Internal != Remote



Internal



Remote

```
SELECT * FROM postgis WHERE app = 'pgdump' AND 'pgrestore'
```

Product	Time to Load	Time to Restore
Code-Point	4.1mins	50secs
Code-Point Polygons	6mins	1min45secs
Building Heights	25mins	10mins
OSMM ITN	5.5hrs	3mins
OSMM Sites	1hr	14 seconds
OSMM Water	3hrs/30mins	7mins
OSMM Topography	4.5 days	17hrs
Terrain5 (contours)	50mins	6.5mins
OS VectorMap Local	12hrs	1hr40mins

```
SELECT * FROM postgis WHERE app = 'pgrouting'
```



```
SELECT * FROM what_i_love_about_postgis LIMIT 10
```

- Existing workshops – Boundless Geo
- Everyone can have it!
- Native support by most GIS software
- ST_SimplifyPreserveTopology
- Indexed Nearest Neighbour
- ST_Transform
- GDAL PG_Dump (bulk loading)
- Storing QGIS style sheets
- ST_AsGeoJSON (vector tiles)
- Full Text Search (FTS) = PostGIS Search Plugin

```
SELECT * FROM what_i_struggle_with LIMIT 5
```

- How to go from Novice → Advance
- How to optimise/performance test postgresql AND postgis?
 - Pgbench or
 - jmeter?
 - pgtool?
- How to lock it down?
- Master/Slave versus pgdump/restore
- How to store versioned data?

Example – Which indexes?

- `CREATE INDEX topoareas_idx ON osmm.topographicarea (descriptivegroup, descriptiveterm, make, physicalpresence);`
`--Query returned successfully with no result in 12670866 ms.`
- `SELECT * FROM osmm.topographicarea`
`WHERE descriptivegroup @> '{Natural Environment}' and descriptiveterm @> '{"Orchard"}'::varchar[]`
`and make = 'Natural' and physicalpresence is null;`
`--Query returned successfully with no result in 5630095 ms.`
- `CREATE INDEX topoareas_gin_descgroup_idx ON osmm.topographicarea USING GIN(descriptivegroup);`
`COMMIT;--Query returned successfully with no result in 5536747 ms.`
- `CREATE INDEX topoareas_gin_descterm_idx ON osmm.topographicarea USING GIN(descriptiveterm);`
`COMMIT;--Query returned successfully with no result in 11503872 ms.`
- `CREATE INDEX topoareas_make_idx ON osmm.topographicarea (make);`
`COMMIT;--Query returned successfully with no result in 8936482 ms.`
- `CREATE INDEX topoareas_physicalpresence_idx ON osmm.topographicarea (physicalpresence);`
`COMMIT;--Query returned successfully with no result in 6657640 ms.`
- `SELECT * FROM osmm.topographicarea`
`WHERE descriptivegroup @> '{Natural Environment}' and descriptiveterm @> '{"Orchard"}'::varchar[]`
`and make = 'Natural' and physicalpresence is null;--Query 35300ms`
- **--Total Time for Standard Indexes = 3.5hrs, SELECT query = 93mins**
- **--Total time using GIN indexes = 9hrs, SELECT query 35secs**

What could WE do to help?

- UK/GB data centric workshops including data (use open data)
- User cases
- Use cases
- How to's
- Best practices
- SQL snippets (for creating tables, indexes etc)

Problem 1: Ready Steady Go.....

How to archive 97 releases of Full GB OSMM Topography Layer??

POSTCARD

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