



Using a Service Oriented Architecture (SOA) to deliver OS MasterMap (Topography and ITN Layers) to the Academic Community

Background

The UK academic community has access to a wide variety of OS products via the JISC funded EDINA Digimap service. This provides bespoke custom mapping and data delivery tools to over 160 institutions on a 24/7/365 basis.

In order to support the research community delivery of OSMM to the academic community involves some unique issues:

- Ability to download large volumes (potentially national coverage)
- Managed access to CoU
- Parallel delivery with conventional OS products, including Land-Line+

Technical Specifications

EDINA's MasterMap solution is provided through a multi-tiered service oriented architecture that has been designed to be linearly scalable to allow us to meet increasing demand.

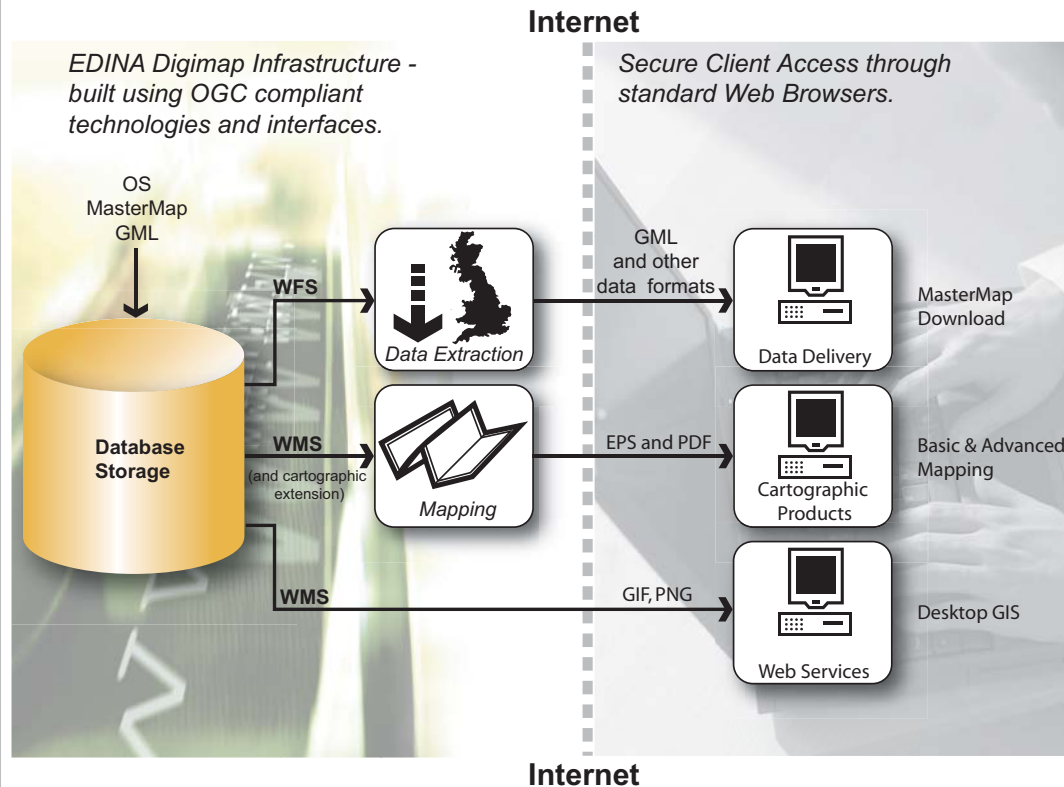
Complex, adaptable load measurement and load balancing functionality has been designed into the architecture to properly meet the specific needs of the academic community.

One of the services being used is Snowflake Software's GO Publisher Web Feature Server.

The data itself is stored in an Oracle10g Enterprise Edition database, and loaded in through Snowflake Software's GO Loader utility.

EDINA's custom architecture uses the Spring Application framework for robust, scalable, extensible J2EE based services.

High level architectural overview



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Facts & Figures

- some 30,000 current registered users
- a total of 44,000 users over 5 years
- 2.2M maps, 98K downloads
- wide range of users
- 23% of users are Social Scientists (plus geographers)
- 50% of users are undergraduates
- value to community > £20M pa
- used for a very wide range of purposes

Service Oriented Architecture (SOA)

A Service Oriented Architecture (SOA) is a collection of services or software agents that communicate freely with each other using defined standards. SOA is usually based on Web services standards (e.g. using SOAP or REST) that have gained broad industry acceptance.

A **Web Service** is a collection of web-based applications that dynamically interact with other web applications using open standards such as XML, UDDI and SOAP. These standards provide greater interoperability and some protection from lock-in to proprietary vendor software.

The **Open Geospatial Consortium (OGC)** have specified a set of standards for delivering geospatial data via web services. The most significant specifications are for Web Map Service (WMSs) and Web Feature Service (WFSs).

EDINA has used WMSs for a number of years internally and has recently exposed these externally. EDINA is now using WFS to deploy its MasterMap data supply service. EDINA is also investigating the use of other OGC specifications such as Catalogue Service and Web Coverage Service and the collision of OGC standards with GRID Computing.