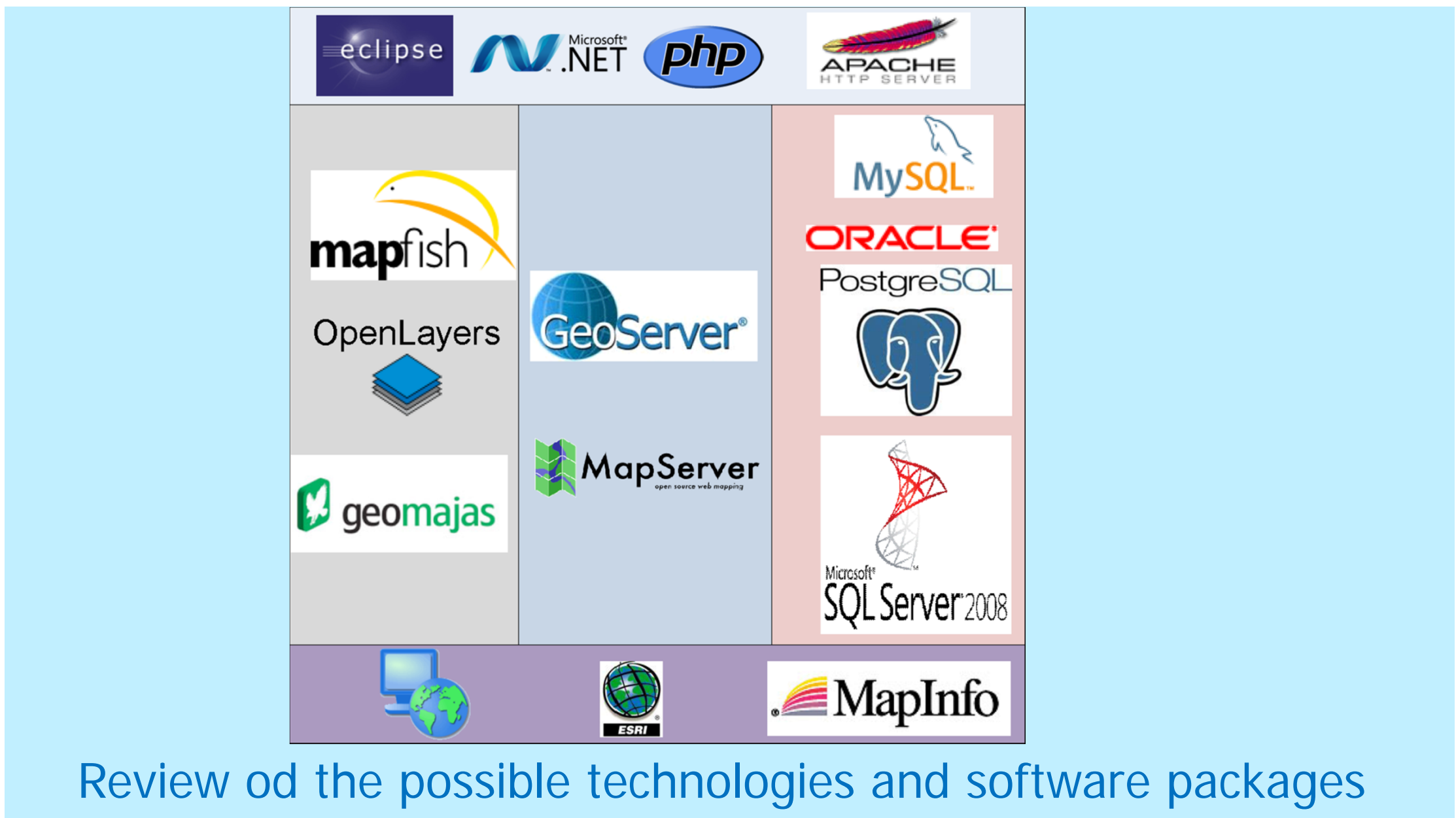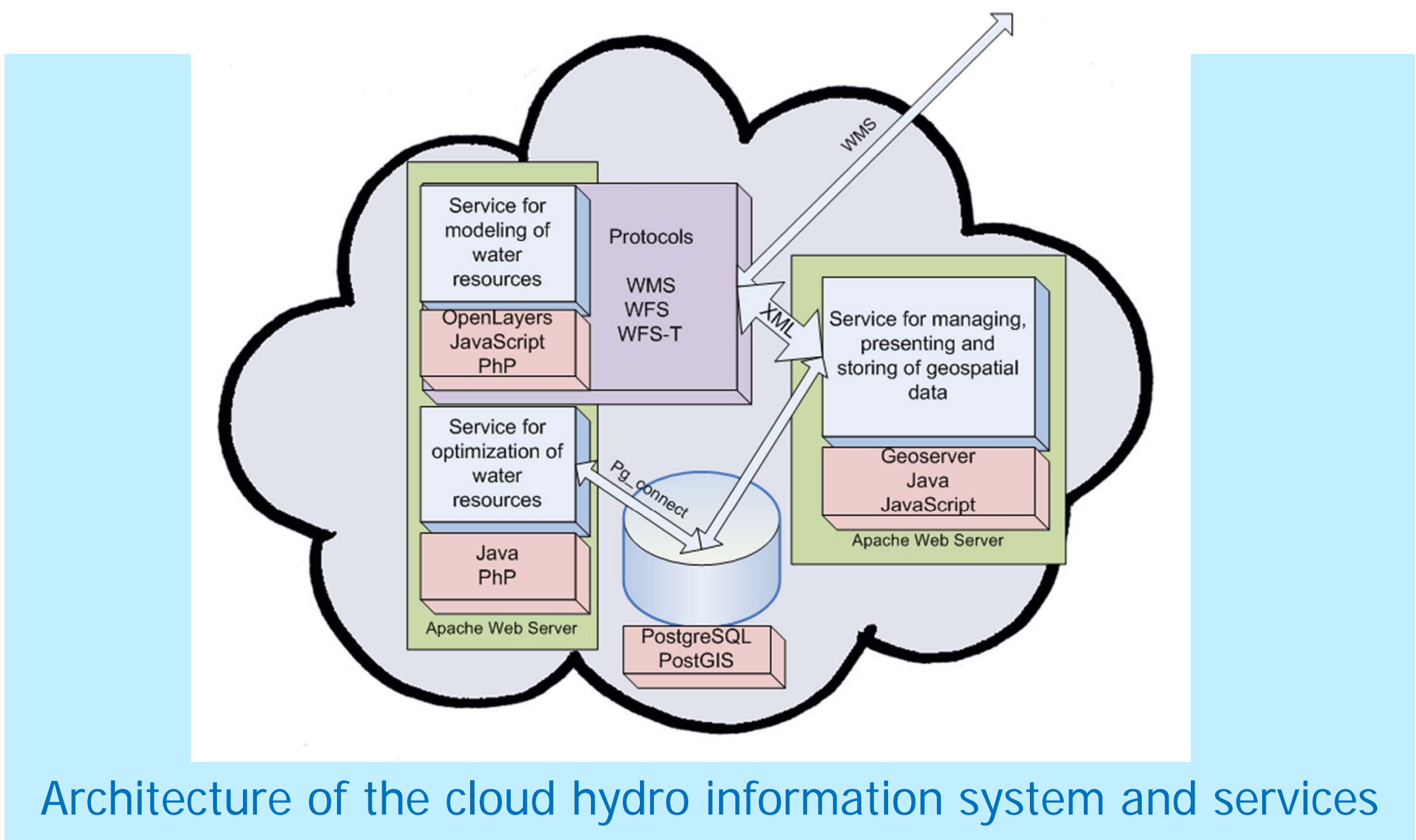# ARCHITECTURE OF A PROTOTYPE CLOUD APPLICATION FOR A HYDRO INFORMATION SYSTEM
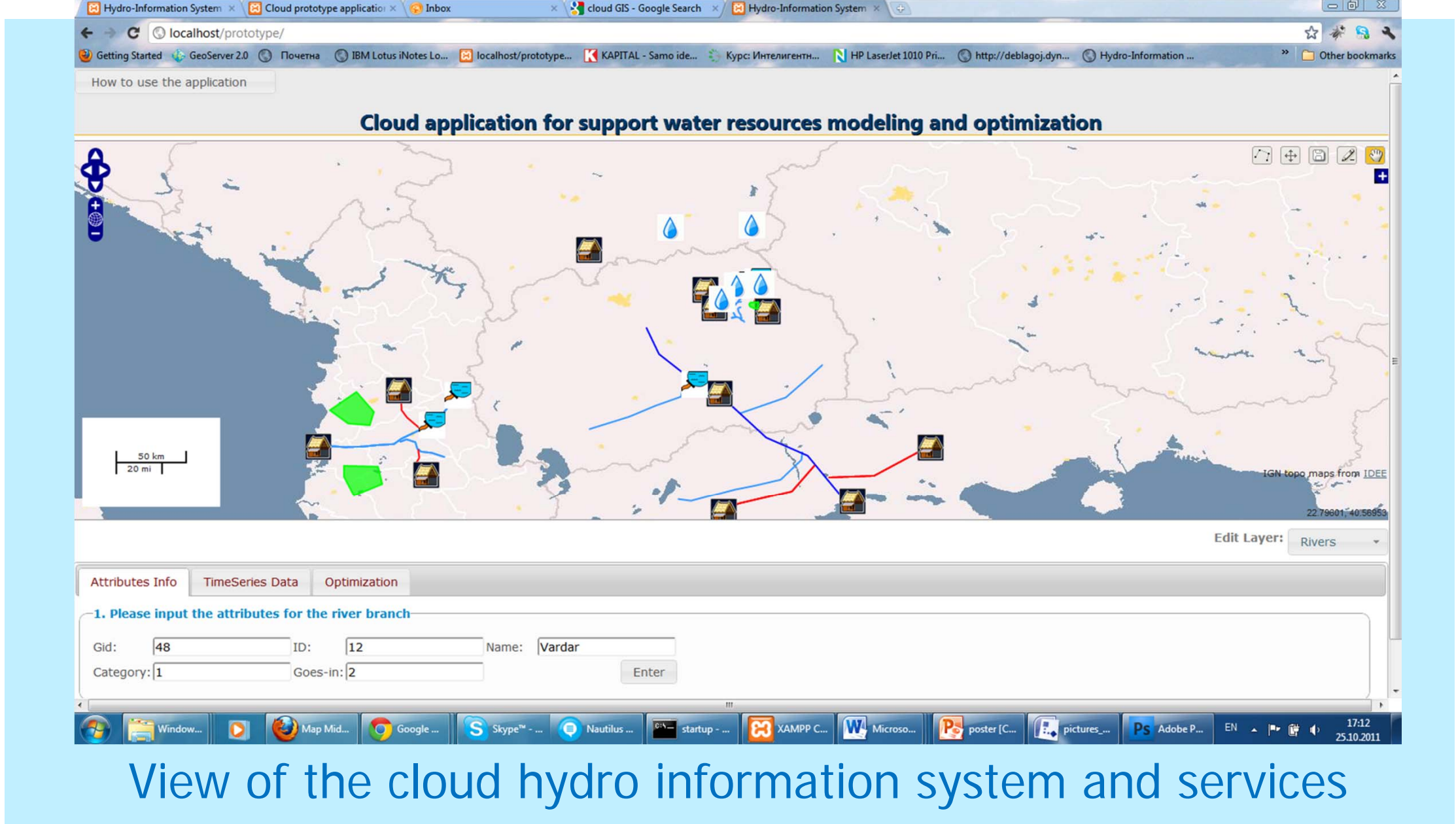
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Review od the possible technologies and software packages

Architecture of the cloud hydro information system and services

View of the cloud hydro information system and services

Cloud is the latest development in Information and Communication Technologies (ICT) with revolutionary implications for business and society, creating new possibilities and enabling more efficient, flexible and collaborative computing models.
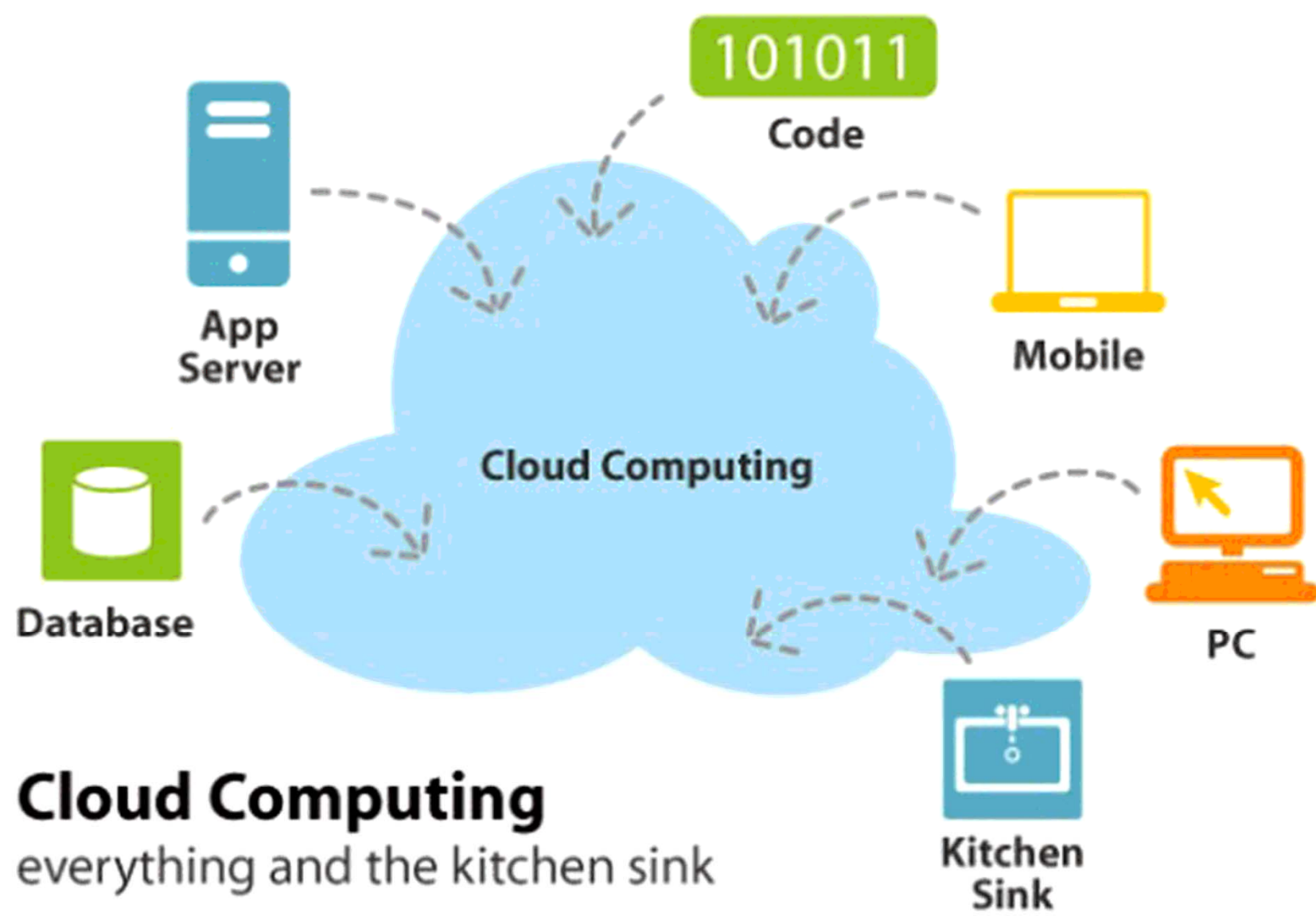
Cloud computing delivers computation, software, data access, and storage services that do not require end-user knowledge of the physical location and configuration of the system. Similar to this concept is the electric grid where users utilize power without understanding the system components.

Hydro information system and web services are based on:

1. Cloud Computing
2. Service Oriented Architecture (SOA)
3. Web Geographic Information Systems (GIS)

The prototype cloud application for the hydro information system has n-tier architecture and three web services:

- Web service for managing, presenting and storing of geospatial data.
- Web service for supporting water resources modeling.
- Web service for optimization of water resources.

Hydro information system and web services are developed using several programming languages (*JavaScript, AJAX, PhP, Java*), additional applications (*Eclipse, Geoserver, PostgreSQL, PosgGIS*), libraries (*OpenLayers*), geospatial standards (OGC – Open Geospatial Consortium) and protocols (*WMS, WFS, WFS-T*). The components and software packages are **open source**. The overall design and system components allow upgrade of the system and its **interoperability, distribution and scalability.**

Planning and management of both urban water systems and basin-scale water resources systems are increasingly becoming multidisciplinary collaborative tasks that will rely on **development of internet based systems based on web services** that combine water related data, weather forecasts, climate variations, urbanization, population and economic growth, etc.

Highlights

Main advantage of **the prototype Cloud application for the hydro information system and web services** *is you need only a web browser while everything else is in the cloud.*

Cloud computing is one of the most promising solutions for present and future water related problems.

Cloud computing advantages over previous technologies are in the scalable computation power, internet based collaboration platform, transparency in the decision making processes and dissemination of valuable information between stakeholders and general public.

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