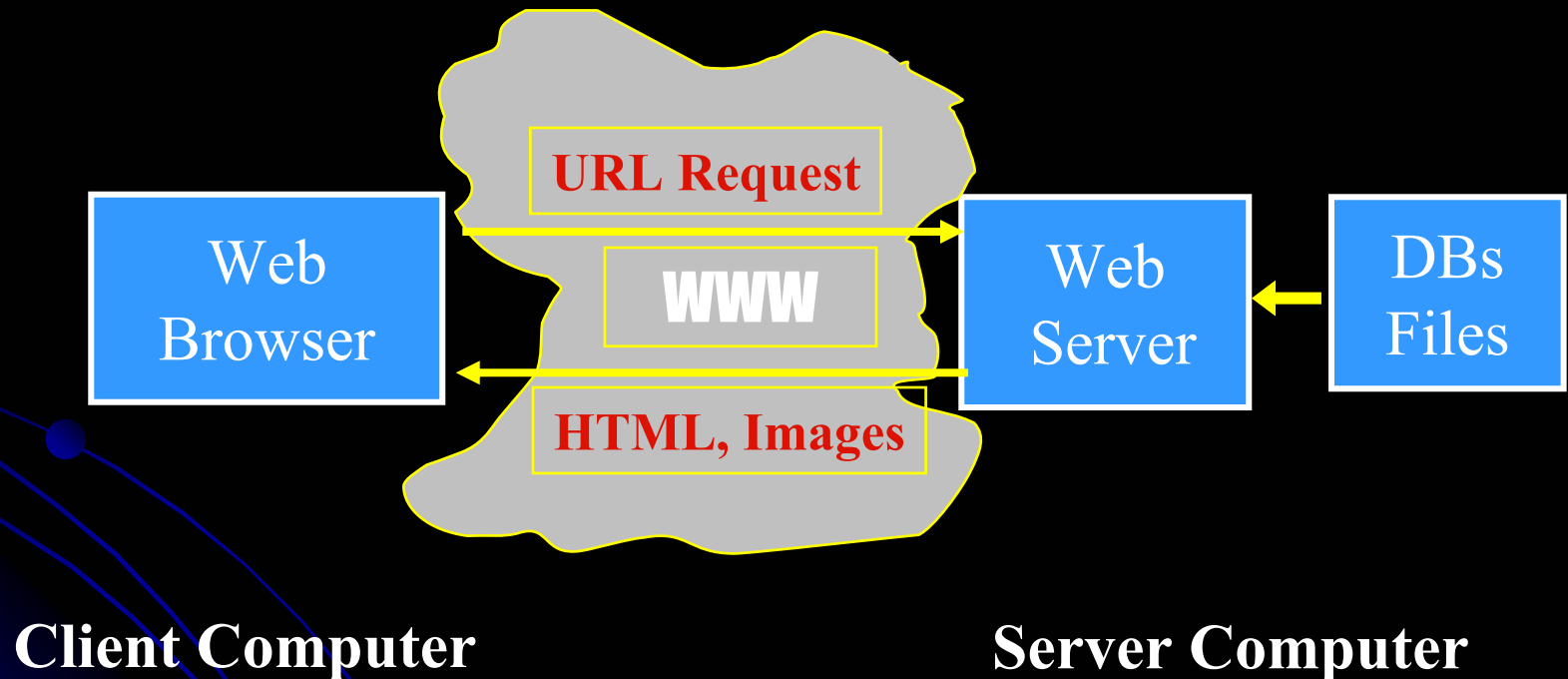


Web Mapping and Internet GIS

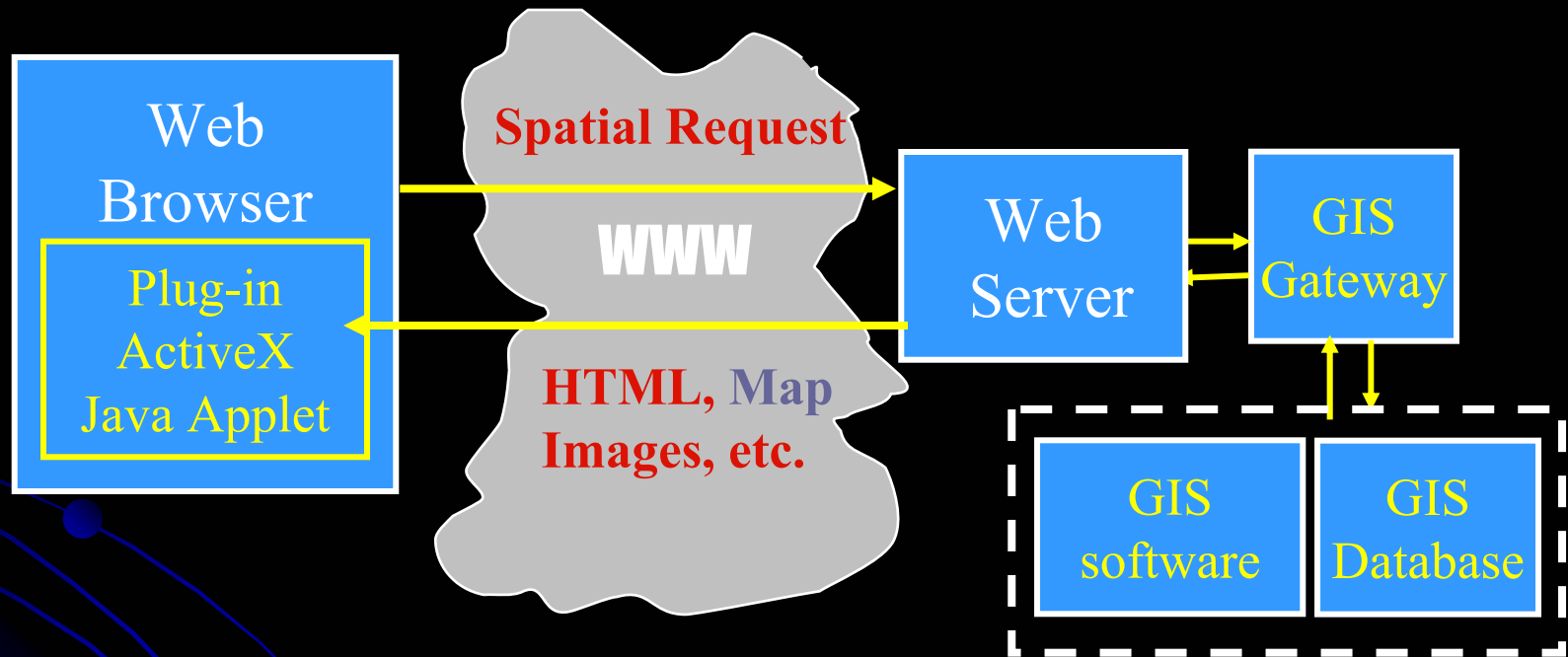
Vincent Tao, Ph.D., P.Eng.
Canada Research Chair in Geomatics
GeoICT Lab
York University
www.geoict.net



A Typical Web Client/Server Model



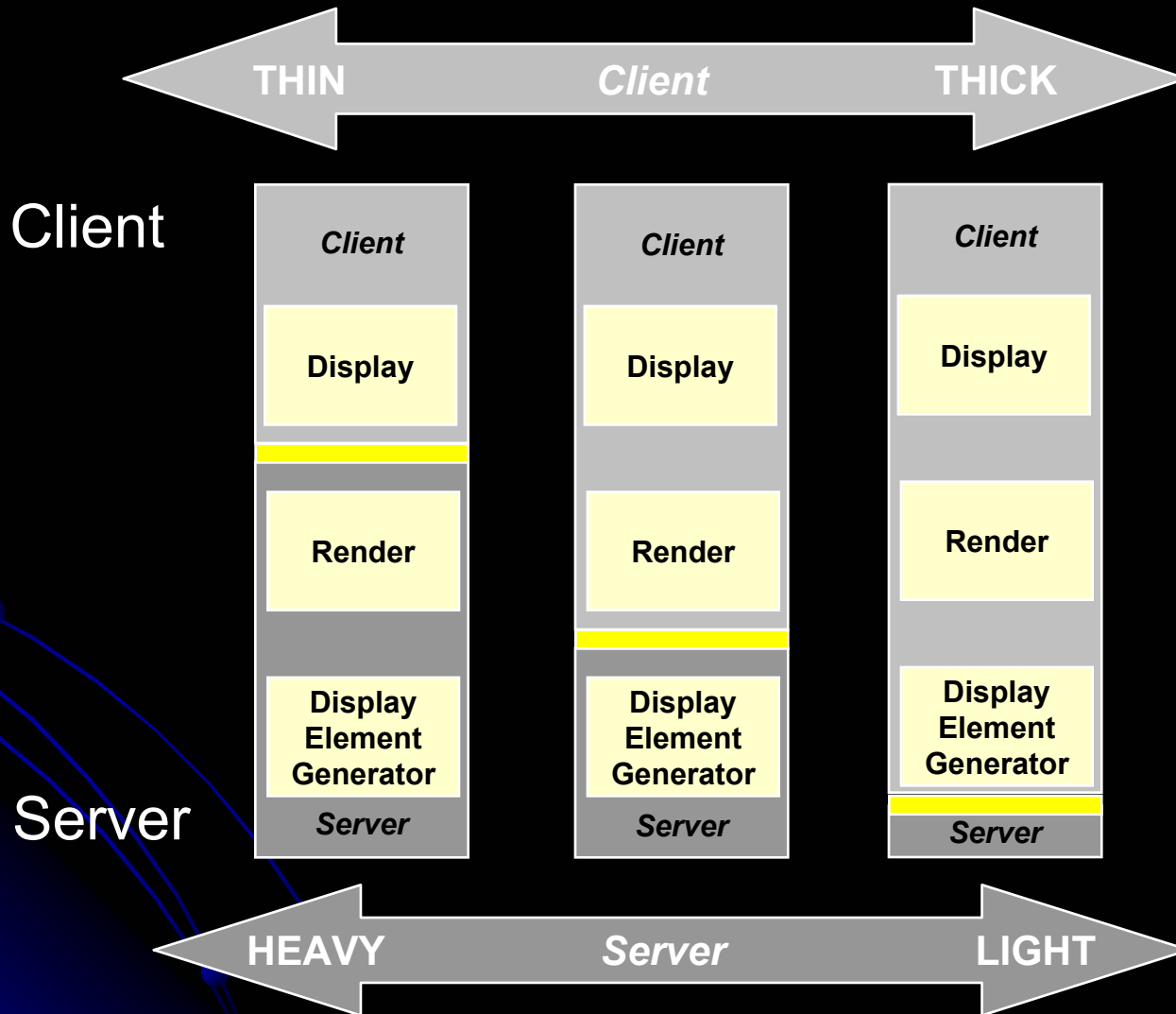
A Typical Web Mapping Model



Client Computer

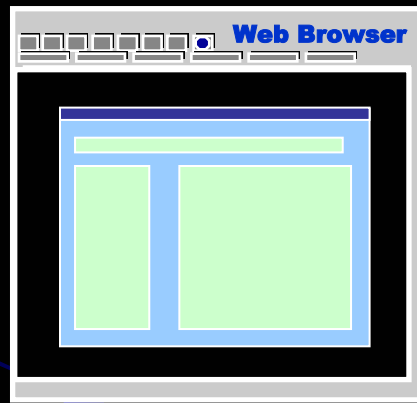
Server Computer

Fundamental Architectures



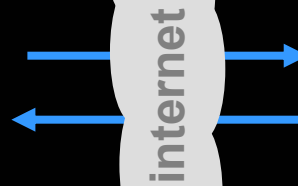
Thin Client Architecture (1/3)

Viewer Client



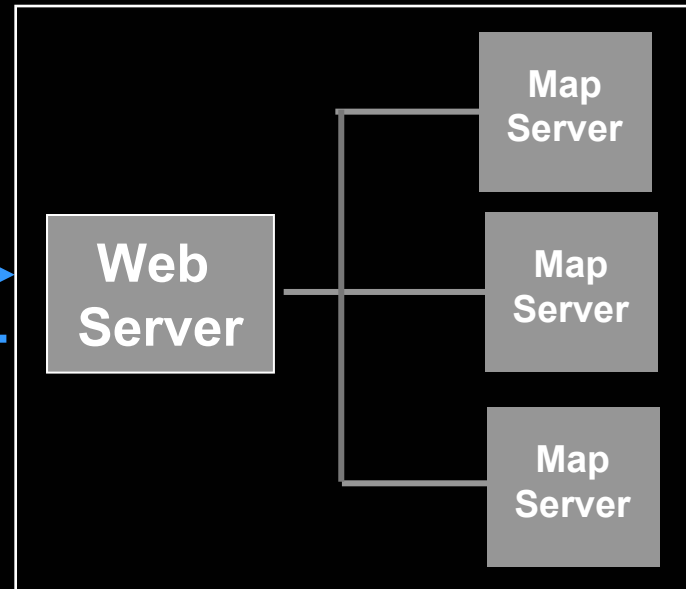
Standard browser

Raster



Raster

Web Map Server



Display



Render and Data Generator

Thin Client Architecture (3/3)

Client (Display)

- standard browser (scripting)

Server (Render and Data Generator)

- Applications (Catalog, Cascading map server, preset applications)
- Databases

Protocol (Data Transfer)

- Raster transfer

Uses

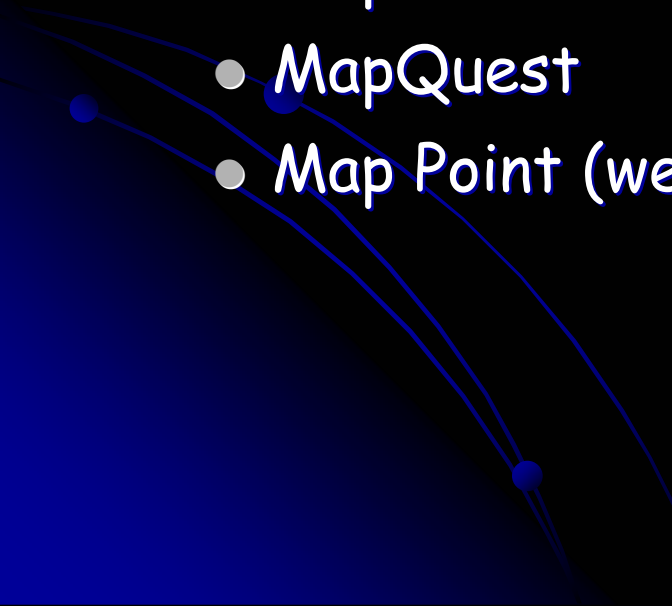
- Mainly for data distribution, display, inventory type

Advantages vs. Disadvantages of the Thin Client Architecture

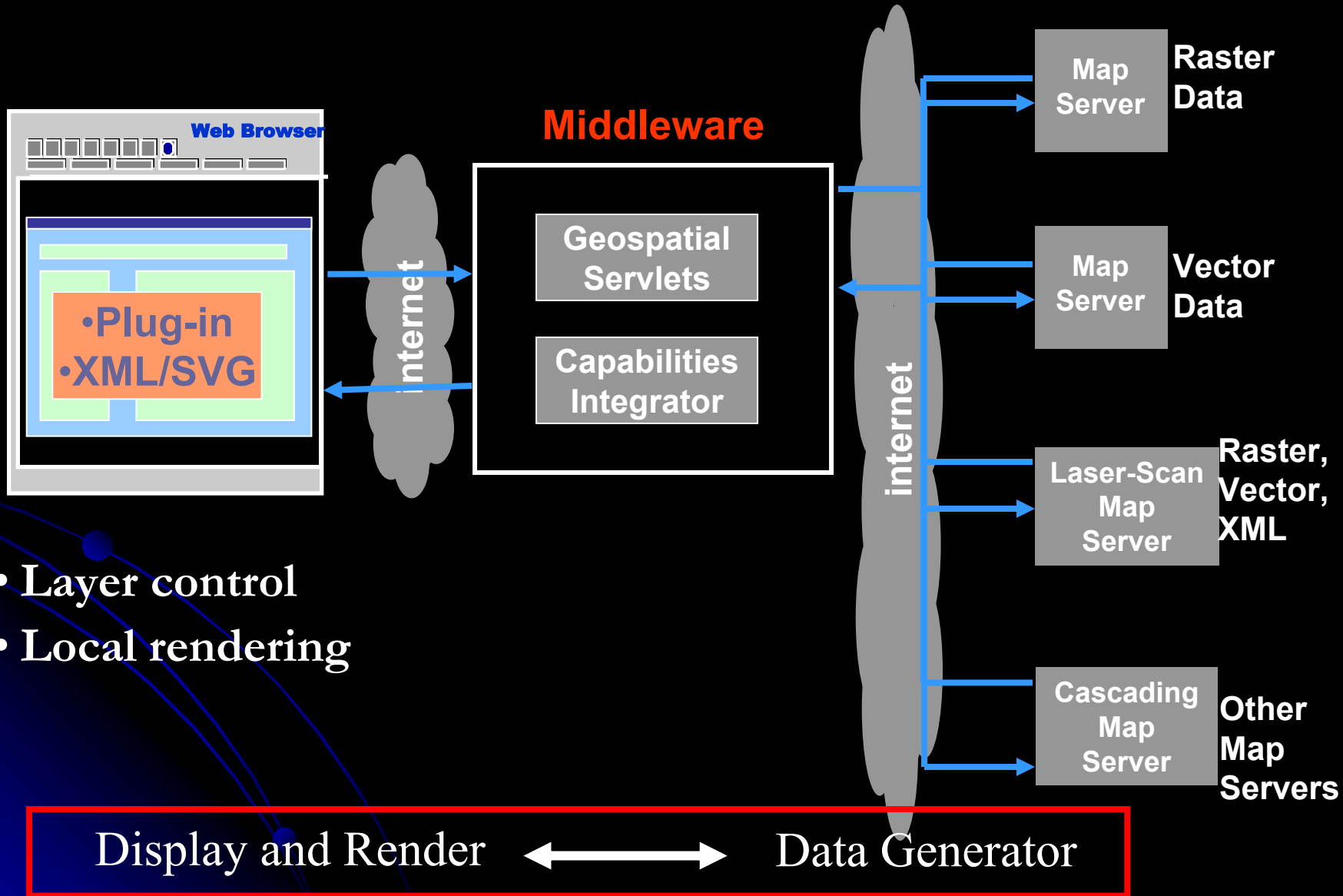
- Centralized control
- Easy for data maintenance/updating
- Keep the latest version
- Generally cheaper
- Integration possibilities

- Not responsive to local needs
- No local accountability
- Large data volume (size of the database)
- Response time slow
- Overloading
- Less interactive

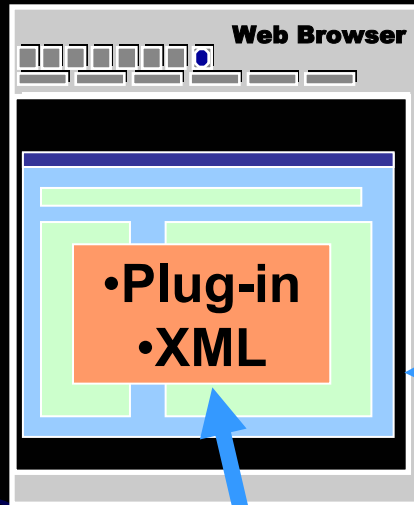
Thin Client Based Systems

- Commercial systems
 - ESRI ArcView IMS, MapObject IMS
 - MapInfo MapXtreme
 - Bentley ModelServer
 - MapServer
 - MapQuest
 - Map Point (web version)
- 

Medium Client Architecture (1/3)



Medium Client Architecture (2/3)



Transfer data format

- Encoded vector
- WebCGM, ActiveCGM, SVG (XML), GML

- Plug-in: enhance the current browser
- XML: employ a XML enabled

browser

Medium Client Architecture (3/3)

Client (Display and Render)

- Plug-ins or Java Applet
- Application (render)

Server (Data Generator)

- Applications (generate the data)
- Databases (data access)


Protocol

- Encoded Vector (GML, ActiveCGM,)

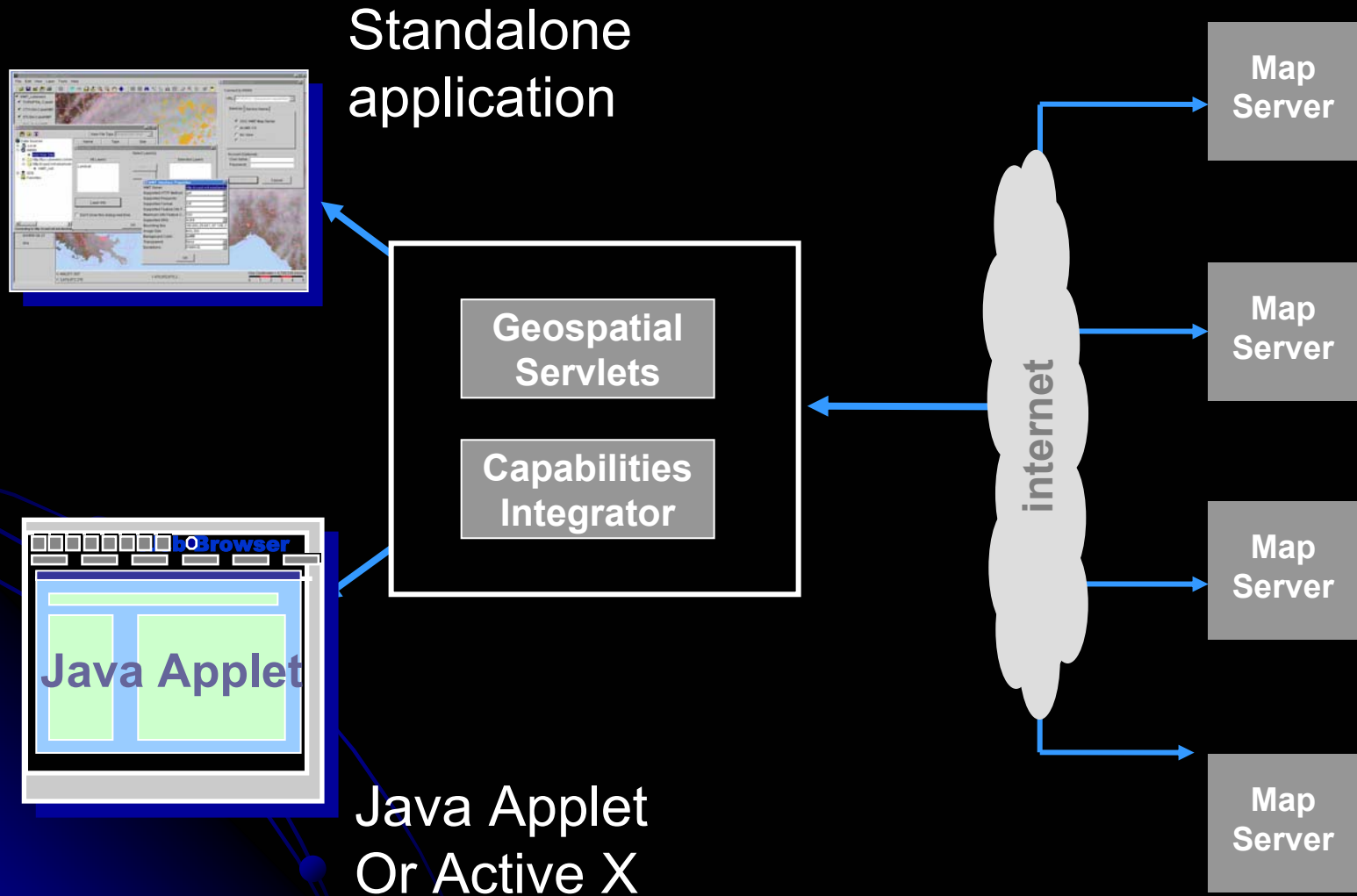
Uses

- Spatial data query and basic analysis

Medium Client Based Systems

- Autodesk MapGuide
 - SDF/WMF
 - Plug-in
 - Integrgraph Geomedia WebMap
 - ActiveCGM
 - Plug-in
 - ESRI ArcIMS
 - AML (XML extension)
 - Oracle GeoXML
 - XML based
- 

Thick Client Architecture



What is your option?

Model	Thin	Medium	Thick
Server	Management Query Processing Map render	Management Query Processing	Management Query Processing
Transfer	Raster (GIF/JPG/PNG)	WebCGM XML SVG	Vector Raster
Client	Display	Display Map render Query	Display Map render Query Processing
Browser	Regular	Plug-in XML	ActiveX Java Applet
User	viewers	professional users	