



Autodesk Infrastructure Map Server

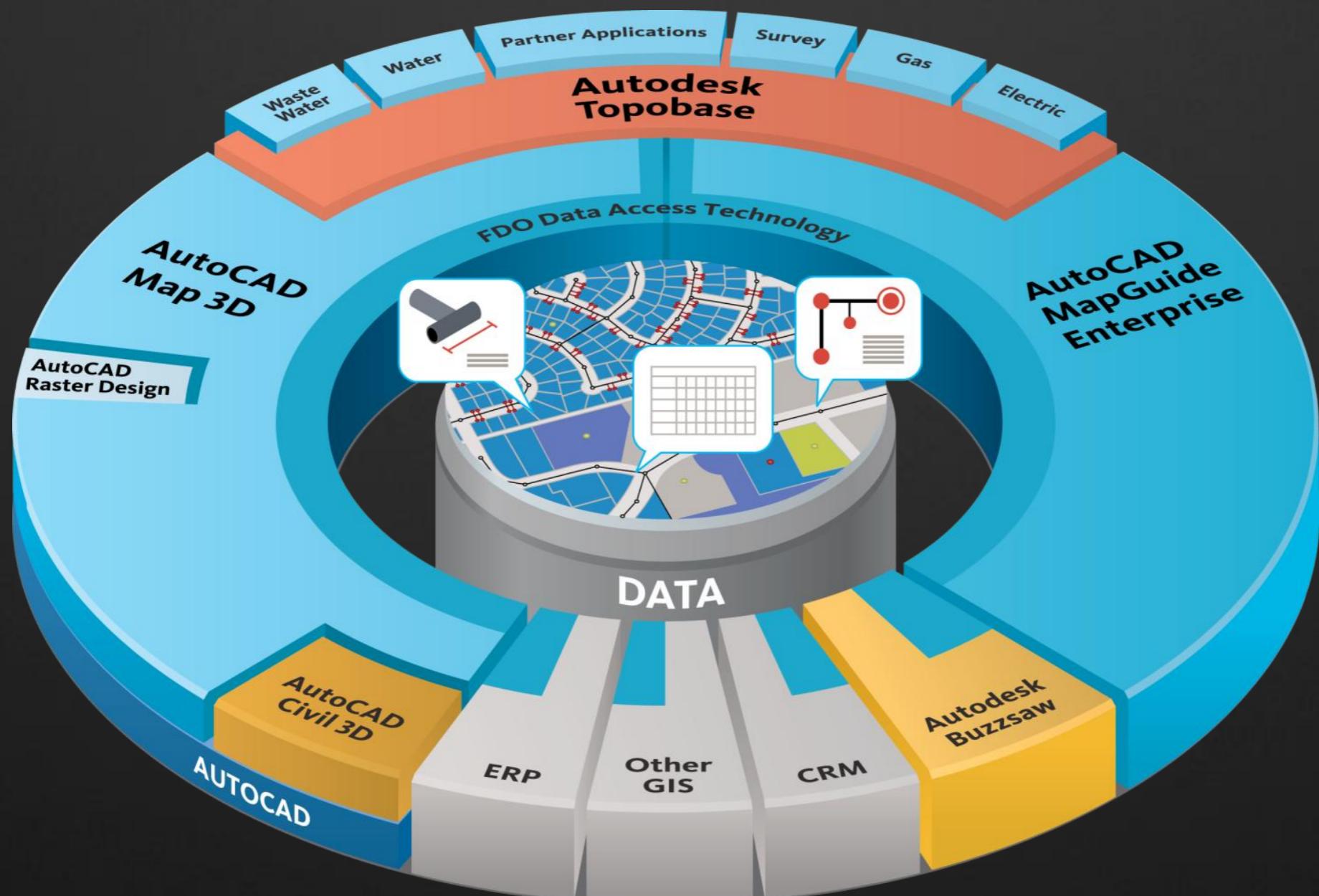
Chapter 1: AIMS Overview

Architecture, Components, and configuration

Chapter Overview

- Introduction to Autodesk Infrastructure Map Server
- System Architecture
 - Server Tier
 - Web Tier
 - Client Tier
- System Components
 - Server
 - Web Extension
 - Viewer
 - Site Administrator
 - Infrastructure Studio

Autodesk Infrastructure Solutions



Autodesk Infrastructure Solutions

Planning
GIS



*AutoCAD
Map 3D*

DATA

Engineering
CAD



AUTOCAD

Autodesk Infrastructure Solutions

Planning
GIS



Solution Modules for
Infrastructure Management

AutoCAD
Map 3D

FDO Data Access Technology

Autodesk
MapGuide
Enterprise

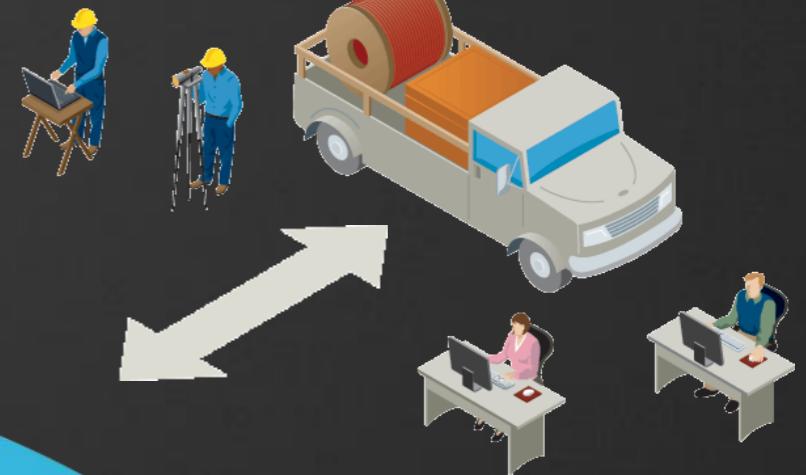
DATA



Engineering
CAD



AUTOCAD



Operations

Public
Web Clients

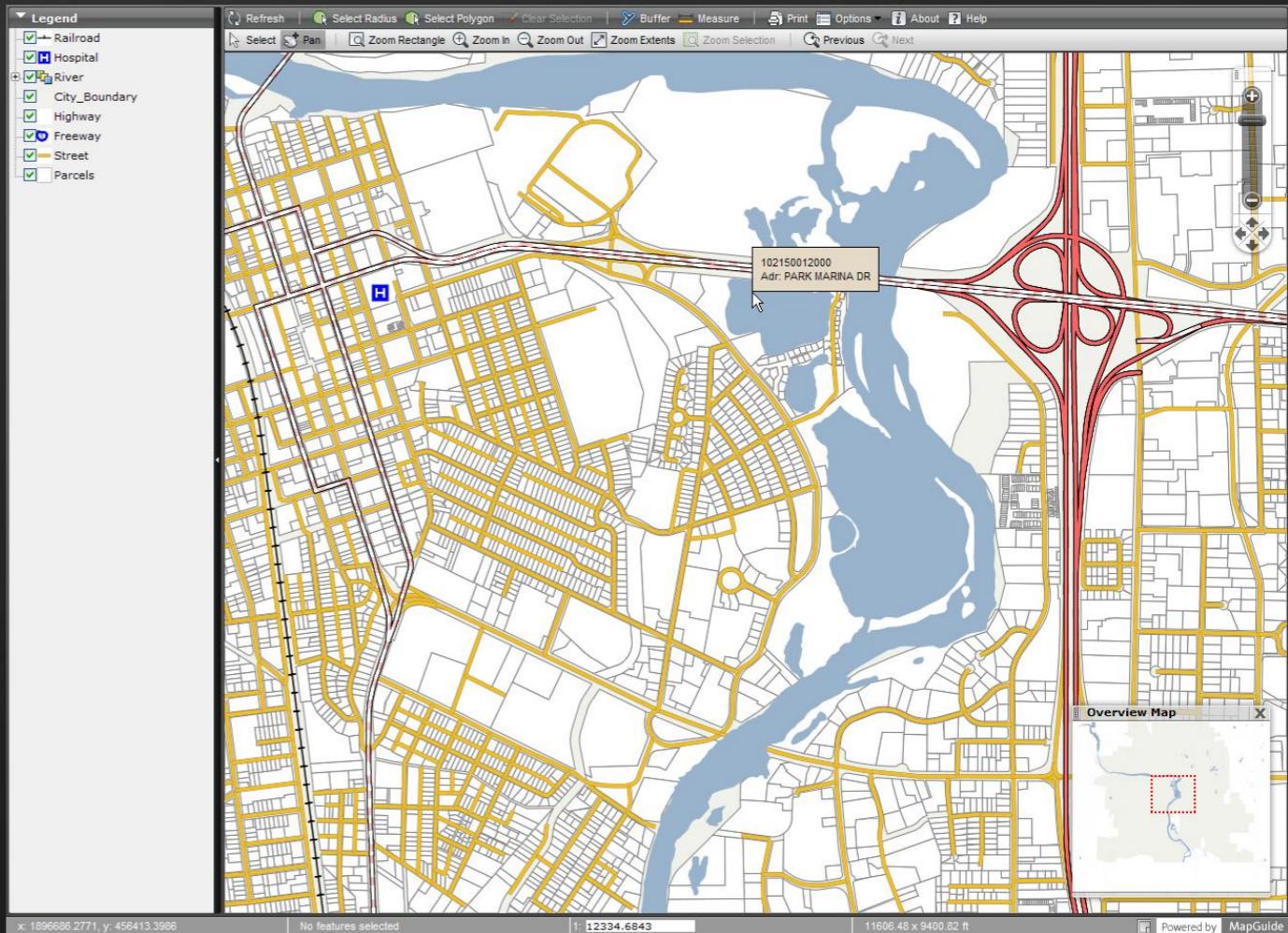


Business
Applications

MapGuide Enterprise

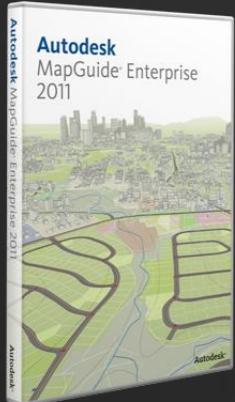
- Web-based mapping platform that publishes maps and spatial applications on-line
- Server-side API to execute GIS business logic

- Distributed in two ways
 - Open source, LGPL
 - Commercial version



Autodesk Infrastructure Map Server

Consolidate and Extend!



MapGuide Enterprise

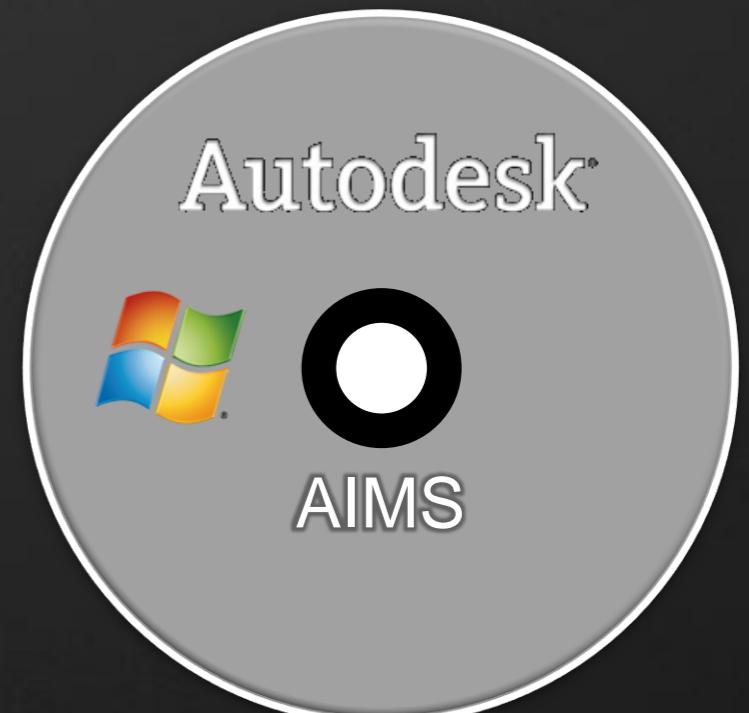
- MapGuide Enterprise Server
- MapGuide Enterprise Web Extensions
- MapGuide Studio
- Autodesk Network License Manager

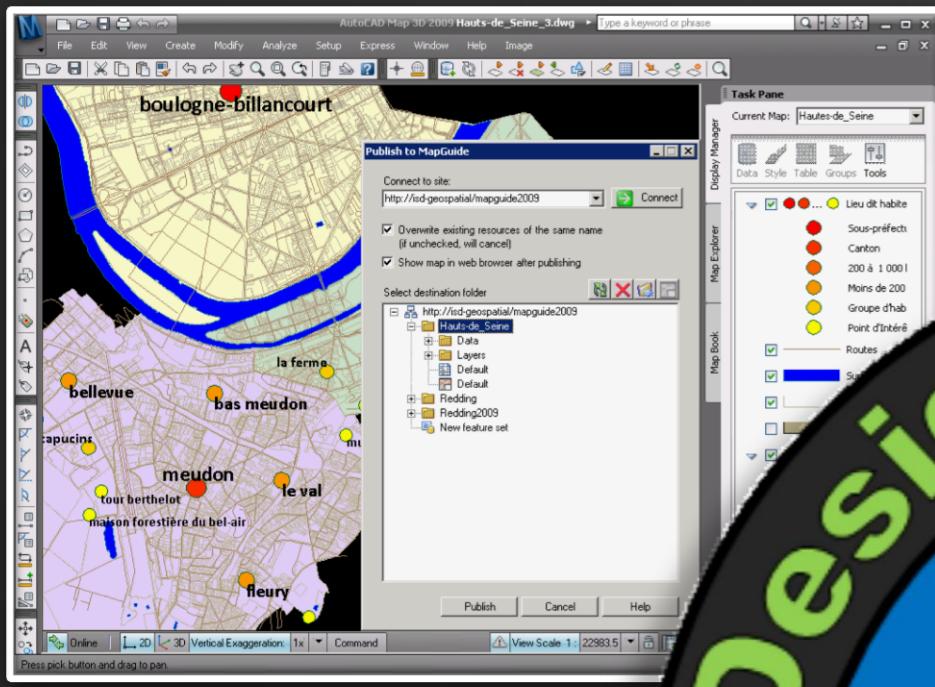
Topobase Web

- Topobase Web Extensions
 - Topobase .Net Framework
 - Topobase Web Layouts
 - Topobase Data Models
 - Topobase Administrator

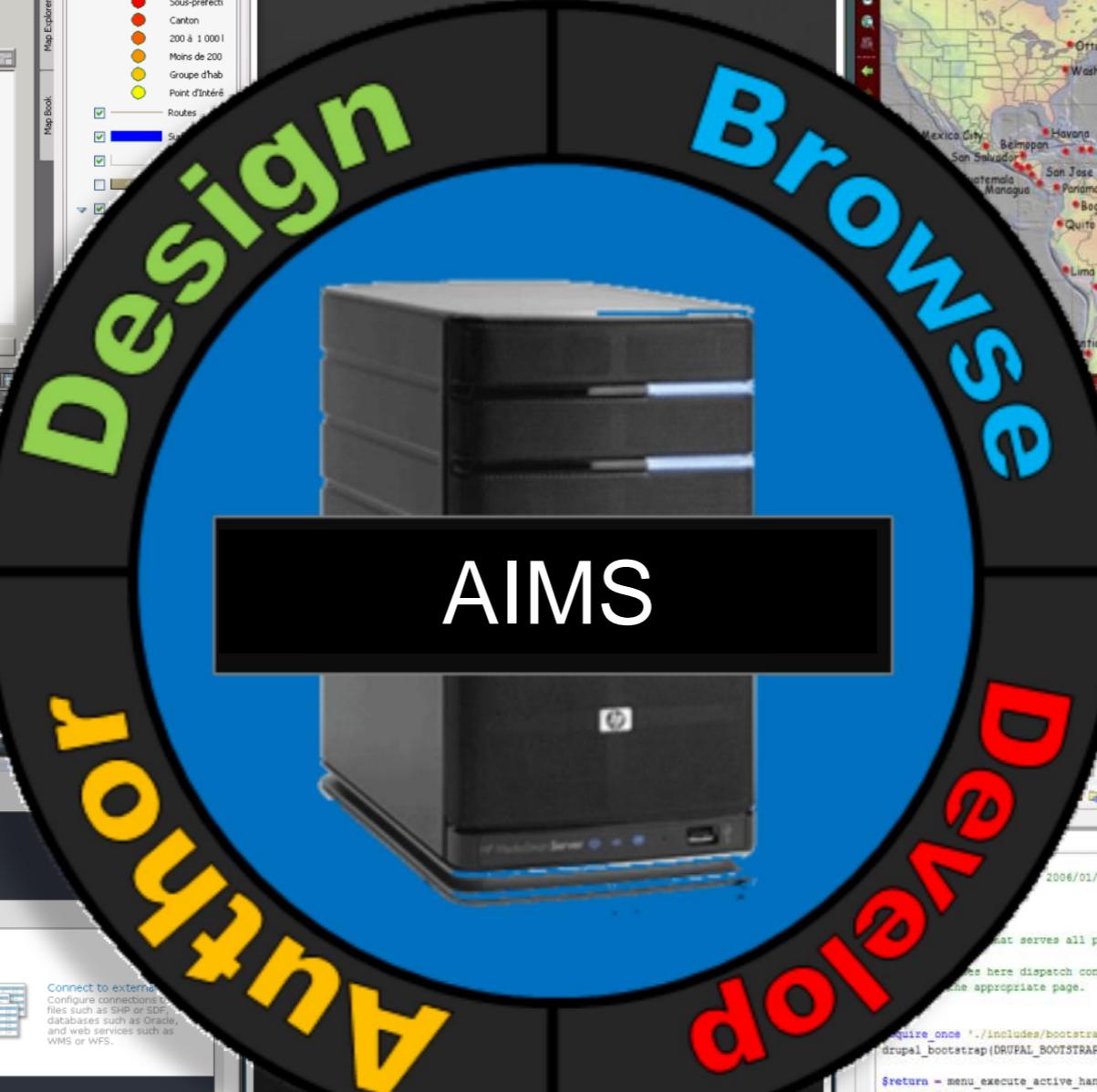
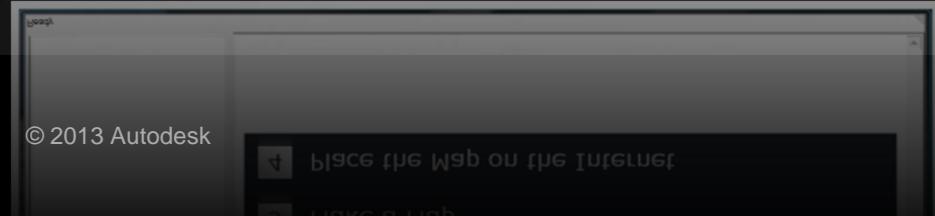
Additional Extensions

- GeoREST interface
- iViewer interface
- “Technology Preview”

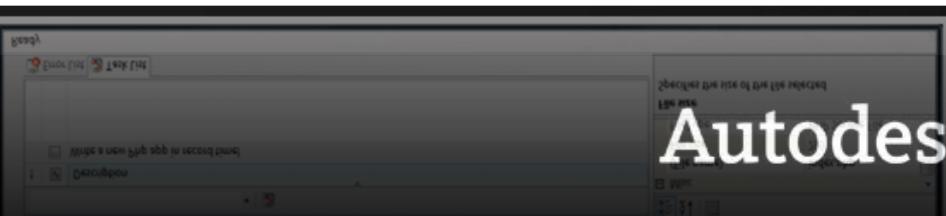




A screenshot of Autodesk MapGuide Studio showing the 'Getting Started' wizard. The steps are: 1. Find Data (Load file-based data, Connect to external data sources), 2. Build Layers (Configure layers to display data), 3. Make a Map (Create a map layout), 4. Place the Map on the Internet (Publish the map to the web). The Site Explorer panel on the left shows a tree structure with 'Data', 'Layers', 'Layouts', and 'Maps' sections.



A screenshot of Microsoft Visual Studio showing a code editor with PHP code, a Solution Explorer panel listing files for 'drupal-4.7.2', and a Properties Explorer panel showing file properties for 'index.php'.



Autodesk Infrastructure Map Server

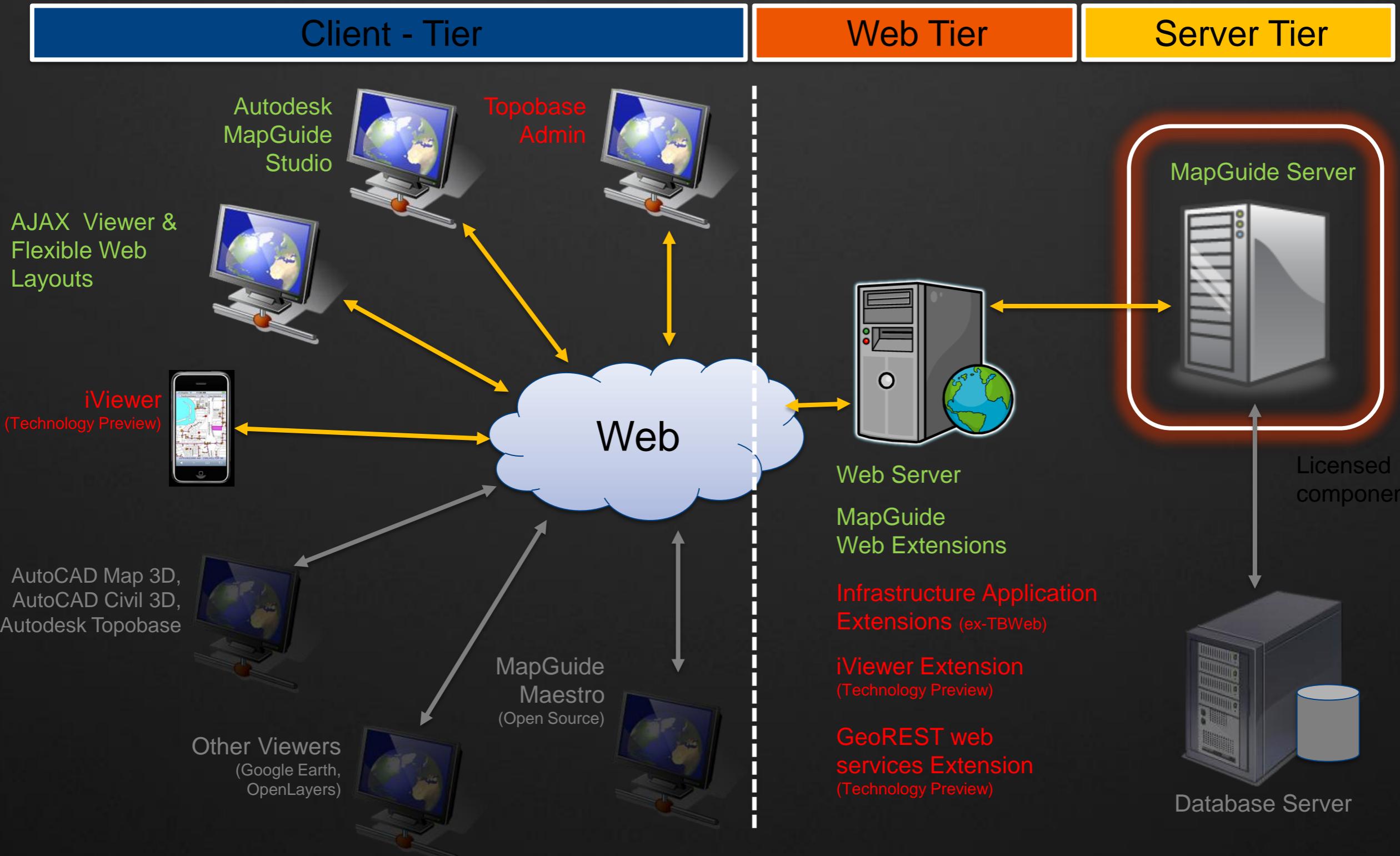
- Market Reach / Industry Focus
 - TBWeb & MGE Consolidation
 - Data Models / User Admin
- Interoperability
 - WMS / WFS Enhancements
 - Publishing & consuming data based on OGC specifications (WMS 1.3, WFS 1.1.0)
- Scalability & Performance
 - Support FastCGI
- Product Line Components
 - FDO – updated Providers and WMS/WFS improvements
- End-User Productivity
 - Watermark Feature
 - Additional Consumer Map Services (Open Street Map, Google Terrain)
 - QuickPlot widget in core server
 - iViewer interface (for iPhone / iPad)
- Developer Productivity
 - GeoREST interface
 - Additional documentation (Fusion, HTTP API) – available from Open Source
 - Tiling Enhancements
- Miscellaneous
 - Update majority of dependent components
 - Improved installer for Windows
 - Licensing / Pricing model updates
 - Documentation consolidation/improvements
 - Localized (EN, FR, DE, IT, ES, JP, HU, CZ)

Components

Included with MapGuide Enterprise

New with AIMS

Other Autodesk or 3rd Party components (not included)



Installer Experience

One Unified Installer for Windows



▪ Note:

- Reeses Server on Windows will move to SLM licensing whereas Reeses Server on Linux will continue using NLM
- Only Core Server component will require license

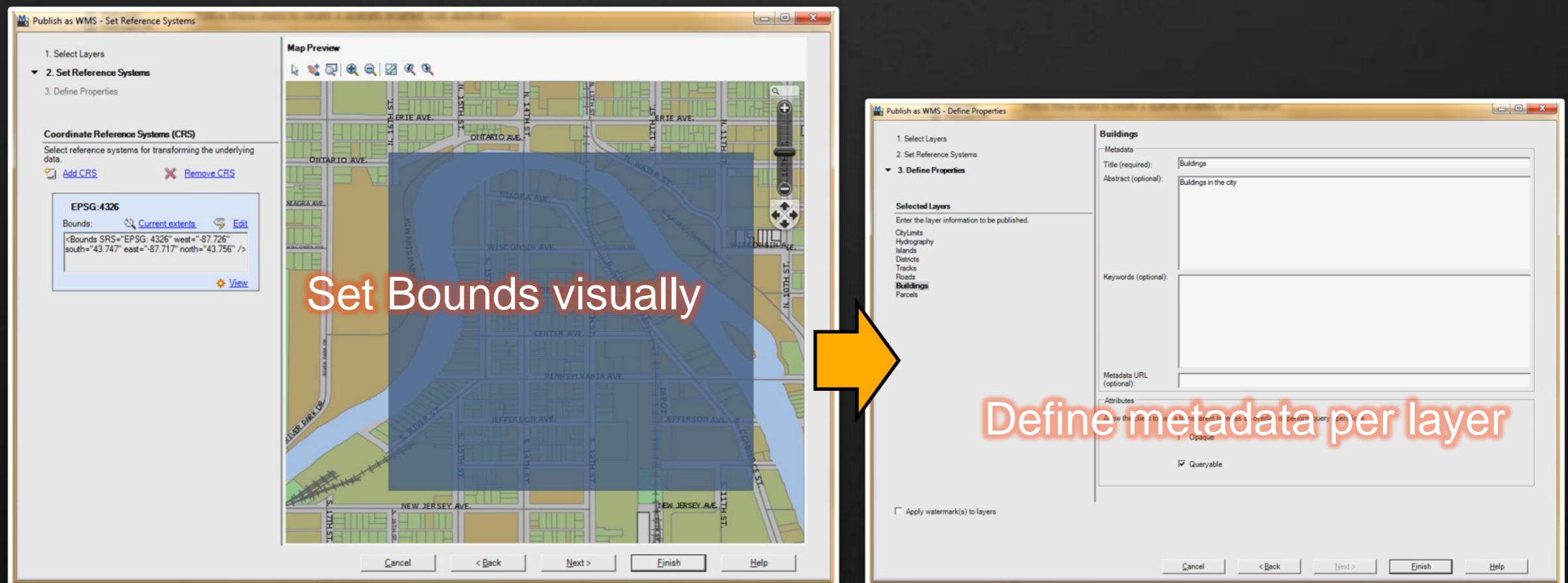
WMS & WFS Publishing

- This enhancement is to provide 100% reliable and OGC certifiable WMS and WFS publishing services in Reeses Server with support for the latest standards (WMS 1.3.0 and WFS 1.1.0).
- Certification for:
 - WMS 1.1.0 & 1.3.0
 - WFS 1.0.0 & 1.1.0



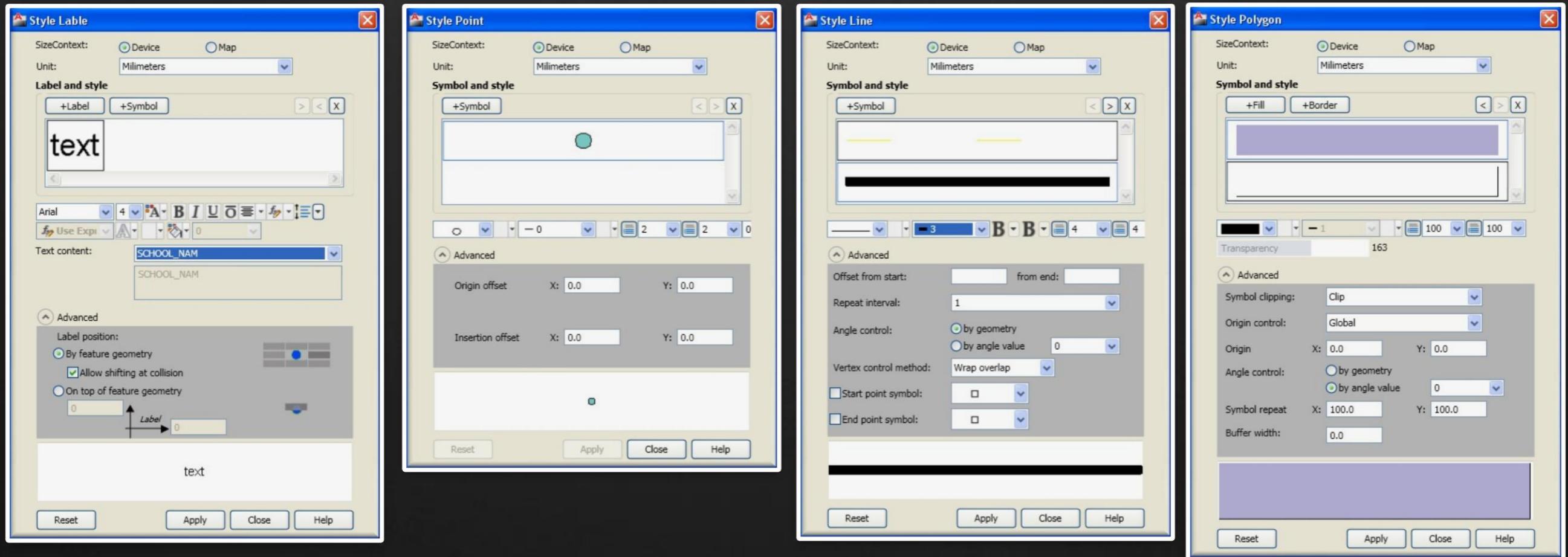
WMS & WFS Publishing cont.

- Improve the UI in MapGuide Studio to simplify the WMS & WFS publishing process.
- Publishing begins from a MapDefinition instead of a LayerDefinition
- Map preview helps to set the bounds for different Spatial Reference Systems



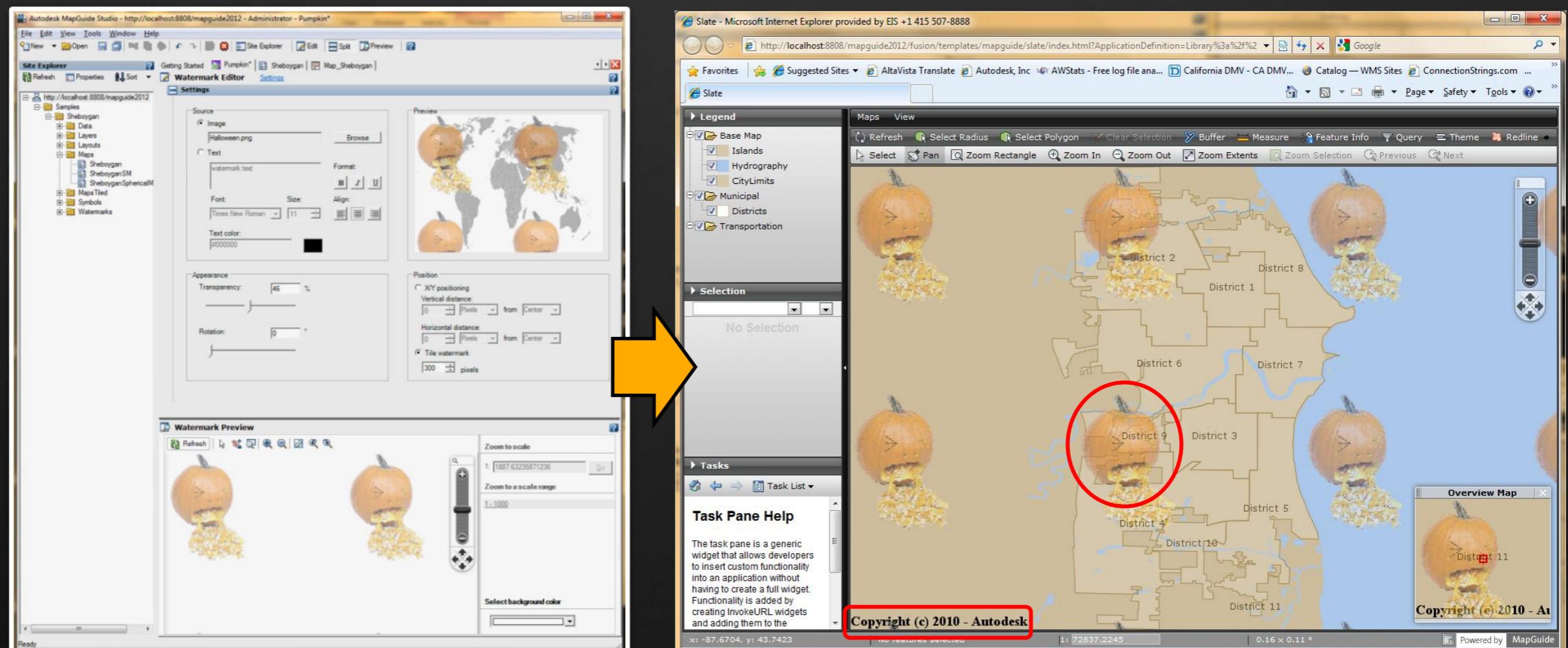
New Stylization UI

- Choice of “old” or “new” UI
- Old Stylization UI will be deprecated



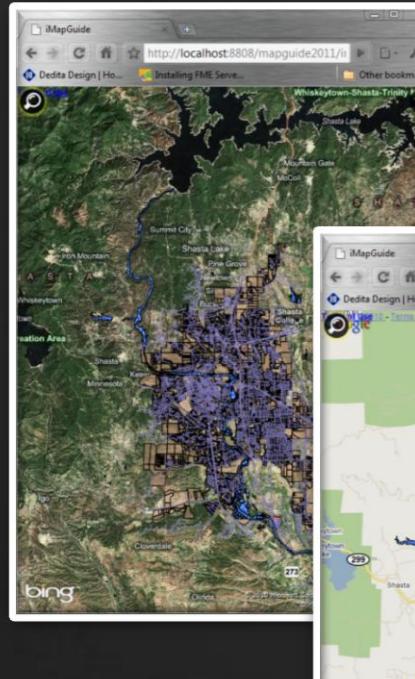
Watermark

- We are offering a new resource type and a UI in Studio to define one or more watermarks for a MapDefinition.
- The watermark can be an image or text.



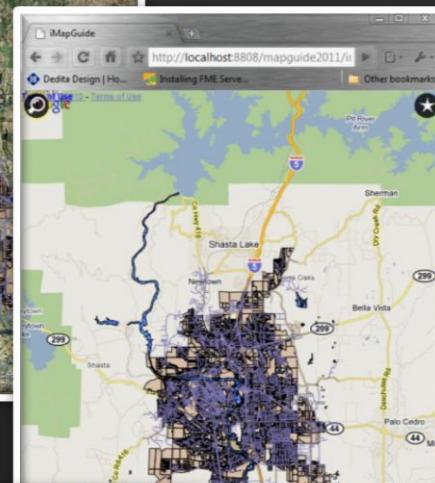
Consumer Map Services

In addition to...



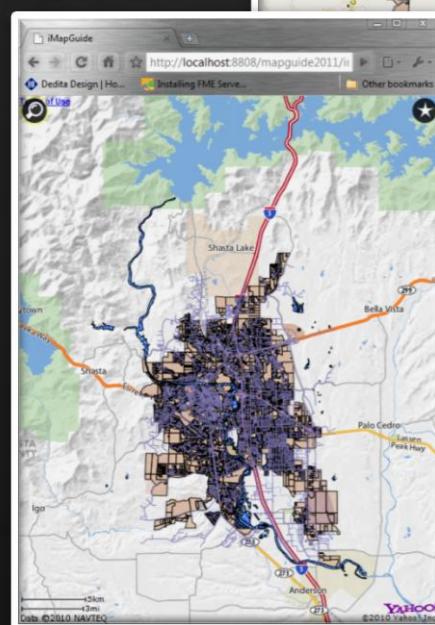
Bing Maps

Streets
Aerial
Hybrid



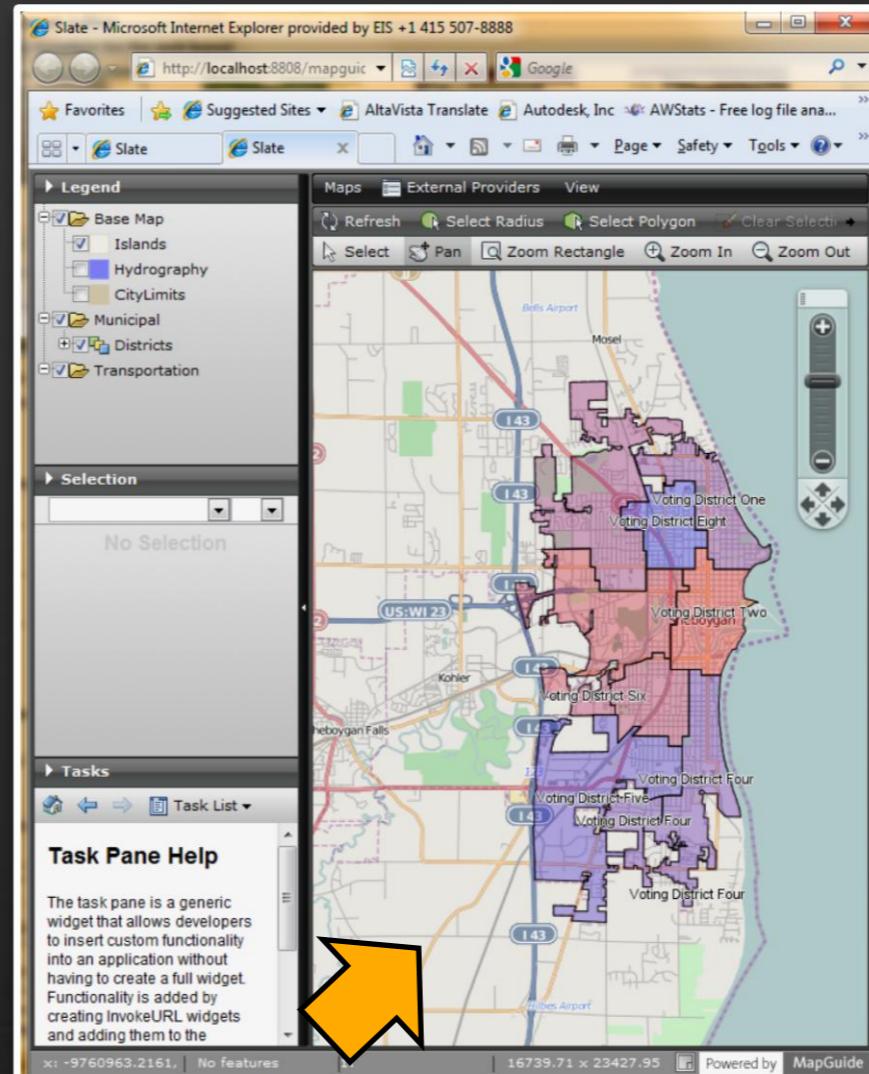
Google Maps

Streets
Aerial
Hybrid

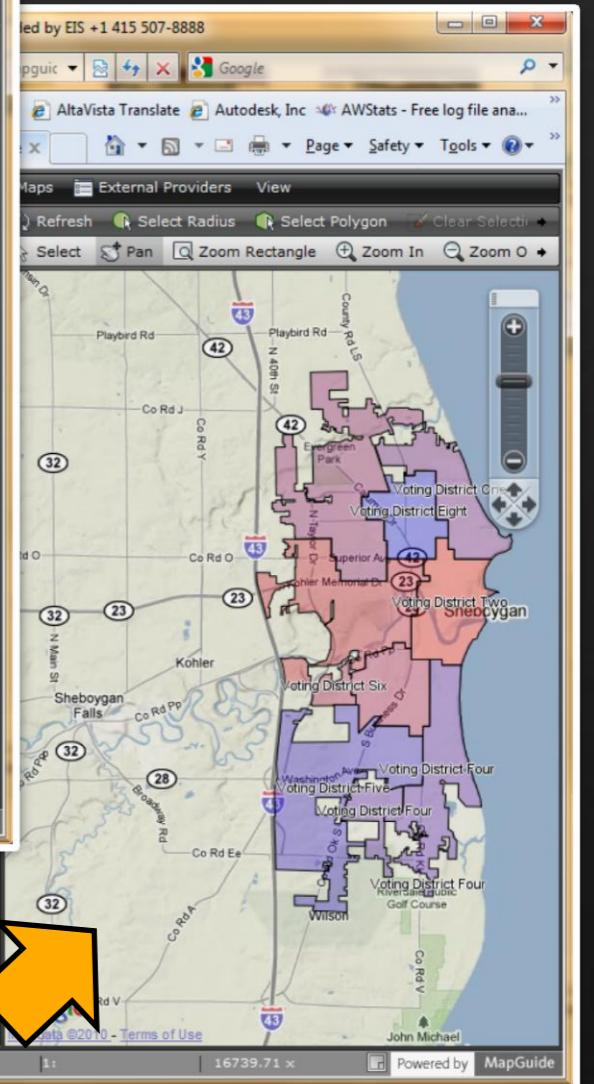


Yahoo Maps

Streets
Aerial
Hybrid



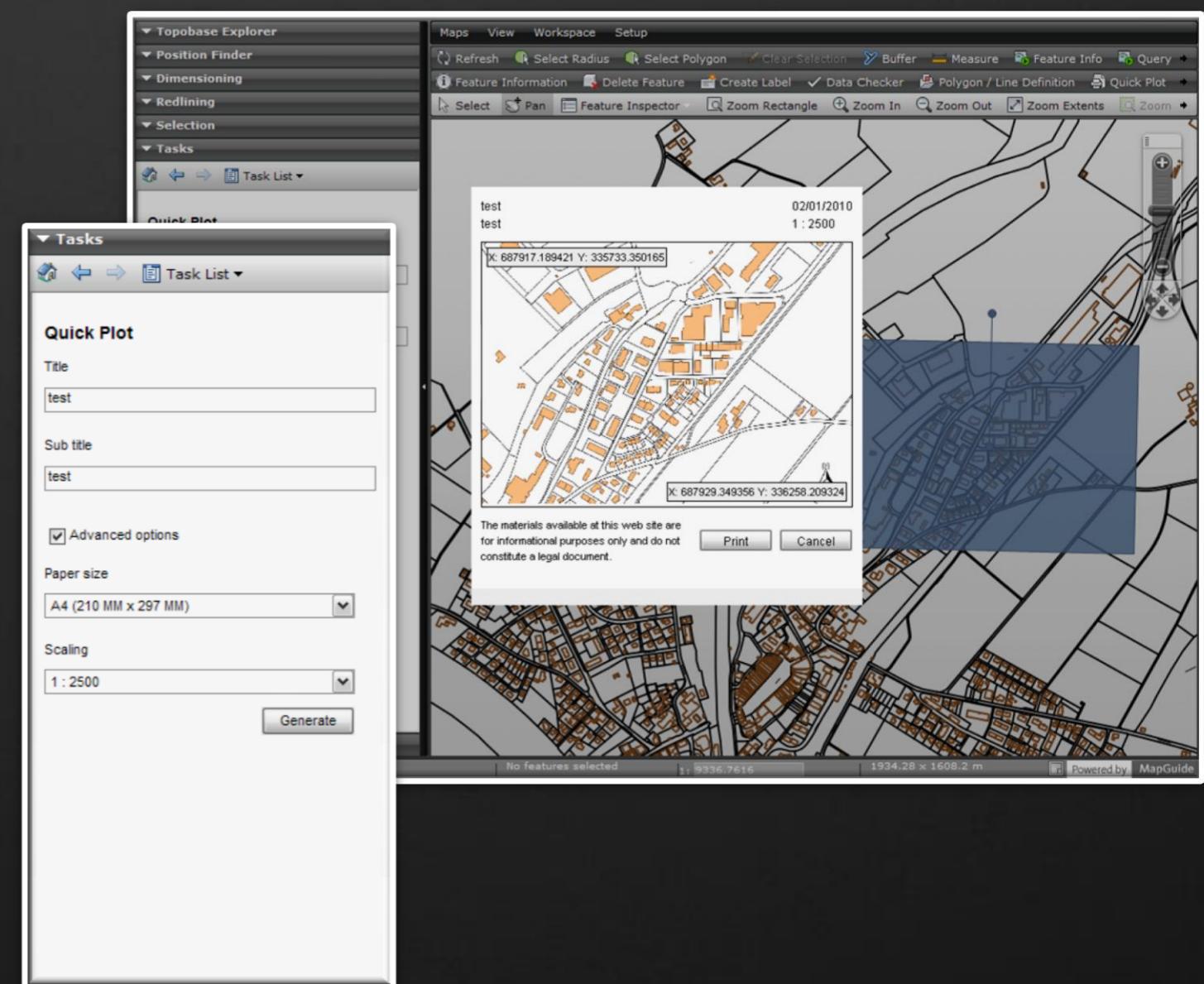
OpenStreetMap



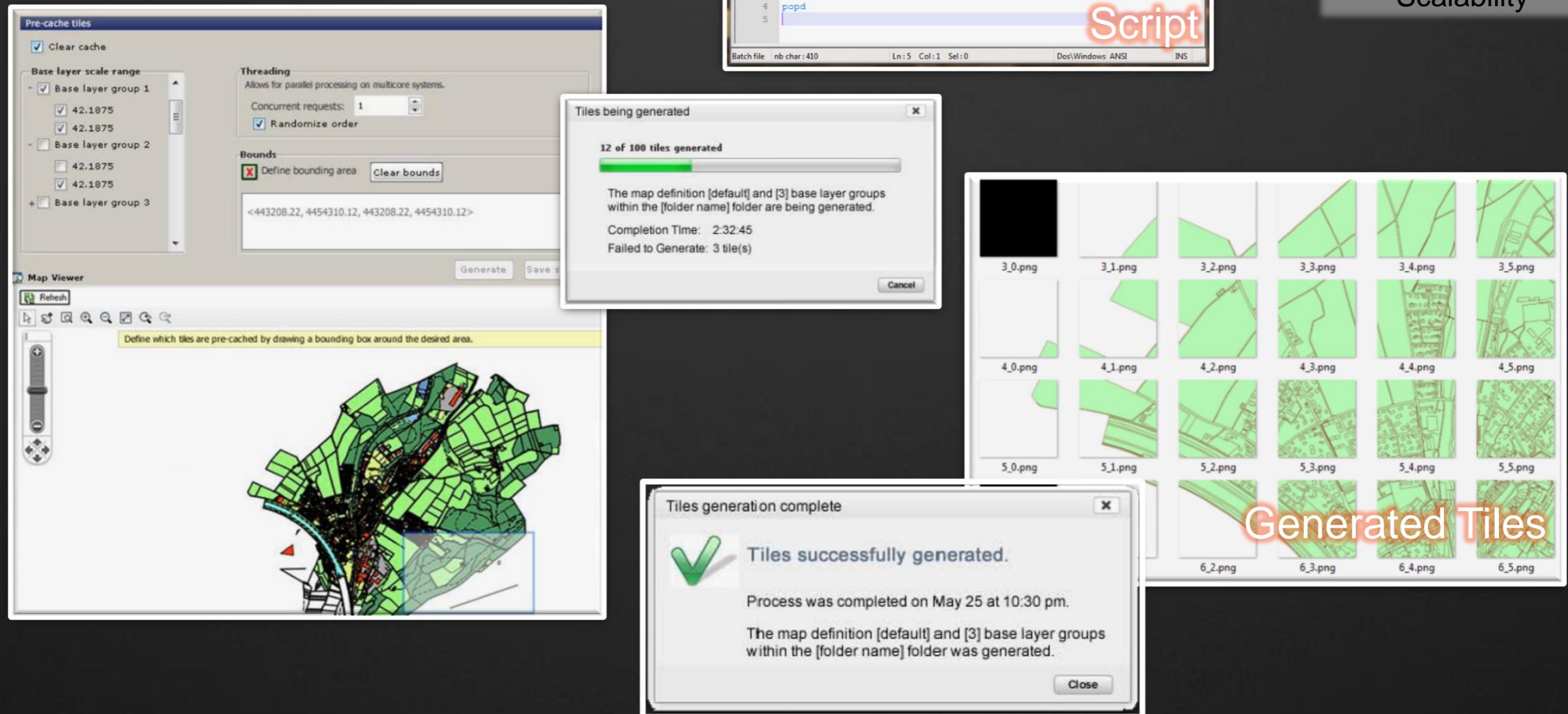
Google Terrain

Printing & Plotting

- The previous TBWeb feature--Quick Plot is available in MapGuide



Map Tiling



- Base layer tiles can be pre-generated and automated via script
 - Define bounds, groups and # of levels for map tiles
 - Generate Now or Save process to script for automation via OS scheduler

Industry Extensions

Interoperability

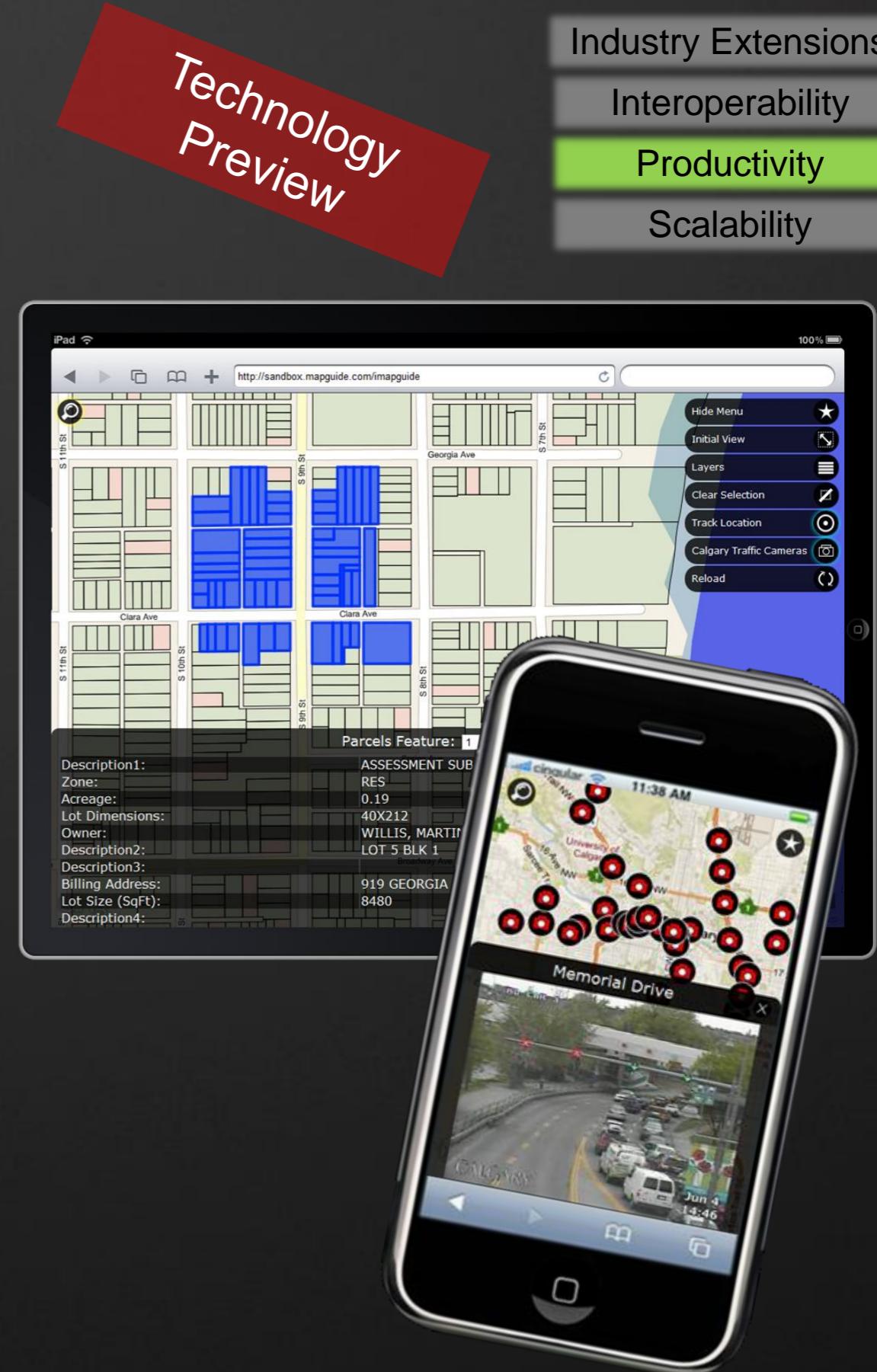
Productivity

Scalability

iViewer Extension

iPhone / iPad interface

- Interface for touch-screen devices – initial focus on iPhone and iPad
- Features:
 - Single- and multi-touch navigation
 - Integration with Location API (GPS, Wi-Fi, etc)
 - Use Consumer Maps (Google/Yahoo/Bing and OSM Maps) as base layer and MapGuide Map-definition as overlay
 - Use existing MGE Map definitions
 - Simple Tools: zoom, pan, initial map-extent, Selections/Info-tool, layer control and locate me!
- Simple MGE Web Extension install – no application download on device



Demo: <http://sandbox.mapguide.com/iviewer/>

Autodesk®

Industry Extensions
Interoperability
Productivity
Scalability

GeoREST Extension

New Web Services Interface

Technology Preview

- Developed by: SL-King, an Autodesk ISV and strong Open Source contributor.
- GeoREST is an Open Source project with direct support for MapGuide Enterprise, MapGuide Open Source and FDO Feature Sources
- Provides a new method of interfacing with MapGuide Server via standard HTML/CSS and template files
- Web:
<http://code.google.com/p/georest/>
- Available on Media as Technology Preview (English only)

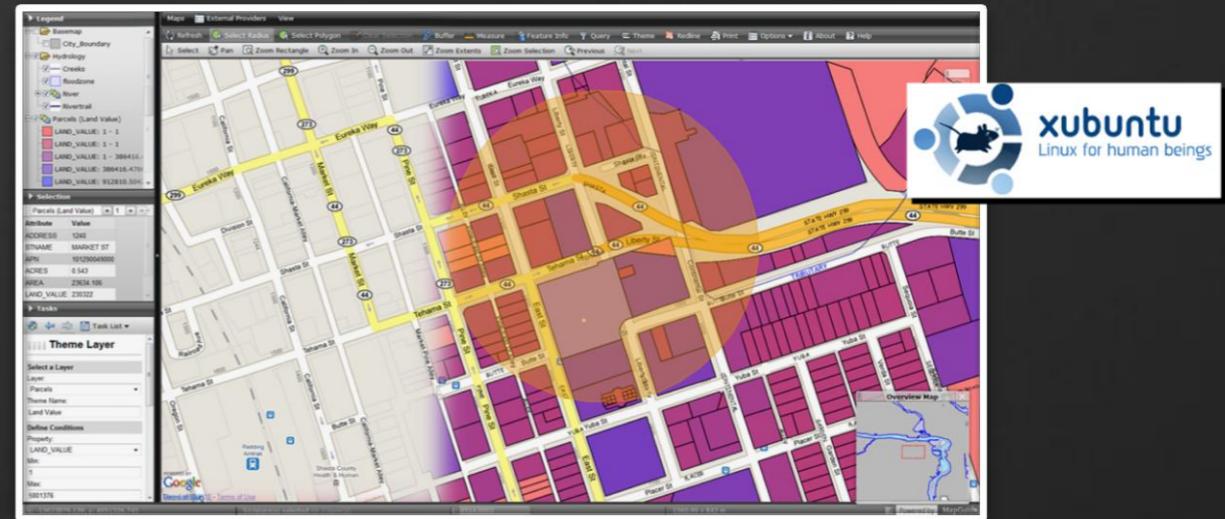
The screenshot shows a web-based property report for lot 2323 Rosstown Road in Nanaimo, BC. The top header reads "2323 ROSSTOWN ROAD - PROPERTY REPORT" and includes the "CITY OF NANAIMO THE HARBOUR CITY" logo. Below the header, the URL "Home > Data > Property > 2323 ROSSTOWN ROAD" is visible. The page is divided into sections: "GENERAL INFORMATION" (Address: 2323 ROSSTOWN ROAD, NANAIMO, BC; Folio: 05536.130; Plan: 27484; Size: .29 ACRES; Legal Description: LOT 7, SECTION 18 AND 19, RANGE 7, MOUNTAIN DISTRICT, PLAN 27484) and "PARCEL MAP" (a map showing the property's location within a larger land area). A "View as KML (Google Earth)" link is present. Below these, there is an "EXTENDED INFORMATION" section showing "Zoning: RS-1 SINGLE FAMILY RESIDENTIAL ZONE". At the bottom, there is a table with columns for "NAME" and links to "HTML", "FEEDS", "KML", "SHAPE", and "GOOGLE MAPS" for various categories like "Bid Opportunities", "Budget Forum", "Building Permit Applications", "Building Permit Statistics", and "Building Permits Statistics".

Highlights from Open Source Community...

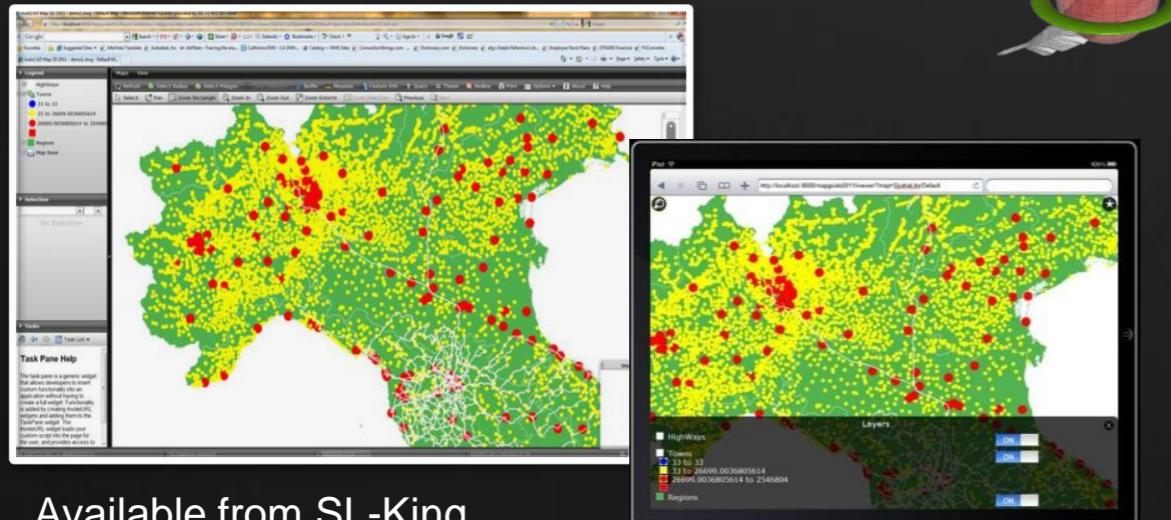
- MapGuide Open Source 2.2
- Maestro
- FDO v3.7
- GeoREST
- FDOToolbox
- FDO2FDO



<http://live.osgeo.org/>

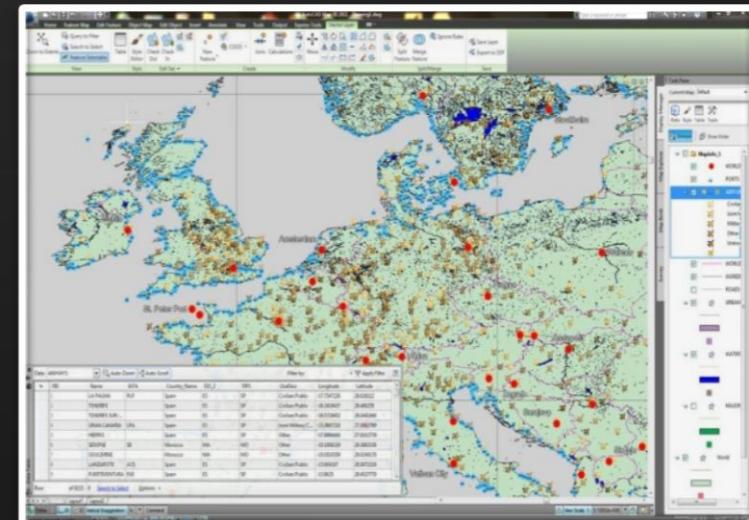


FDO Provider for SpatiaLite



Available from SL-King
<http://www.sl-king.com/fdospatialite/>

FDO Provider for MapInfo



<http://code.google.com/p/groundnut/>

Autodesk MapGuide Enterprise Overview

- Maximize the value of geospatial information with cost-effective web delivery to a broad audience.
- Deliver rich Web 2.0–style mapping sites with easy authoring tools such as Flexible Layout Templates and application widgets.
- Powerful development tools offer the freedom to create custom spatial applications with powerful APIs and flexible development platforms.
- Open-source version offers access to rapid innovation driven by a large development community, with lower barriers to entry.
- Easy to deploy and sustain a robust, scalable web-based GIS application.

Enterprise vs. Open Source

Autodesk Infrastructure Map Server

- Everything in the open source version
- Additional FDO Providers from Autodesk
- Added QA and certification on supported platform
- Application development support through ADN
- Industry module

MapGuide Open Source

- The basis of MapGuide platform
- Free software with LGPL license

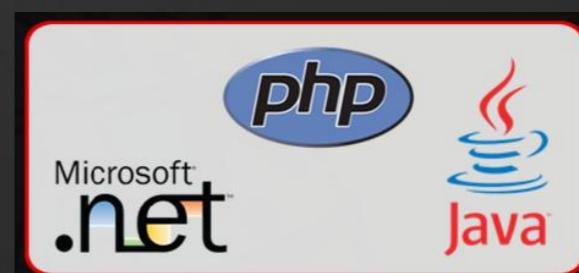
Technical Features

- Native Linux and Windows support
- Three APIs, .NET, Java, and PHP
- Multiple data source access via FDO
- AJAX Viewer / Fusion Viewer
- Server side business logic execution
- Web-based server administration tool
- Stream-lined authoring tool – Infrastructure Studio

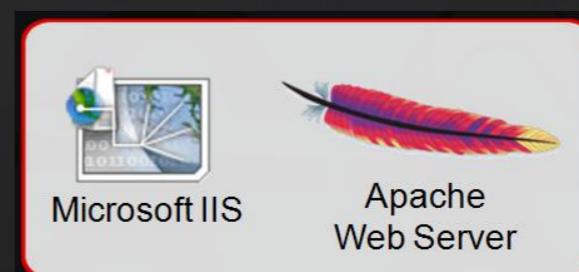
Deploy on



Develop with...



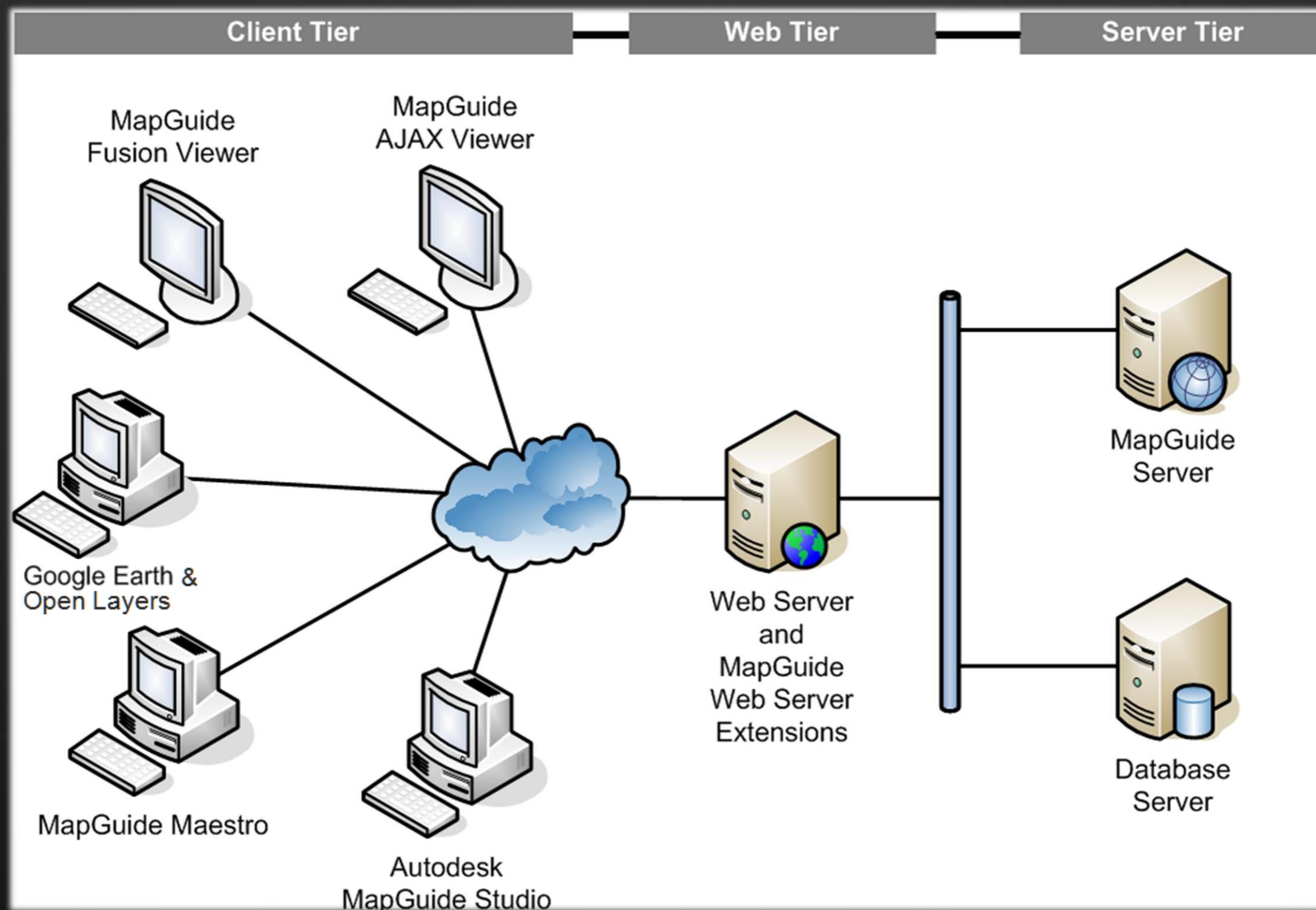
Serve with...



Browse with...

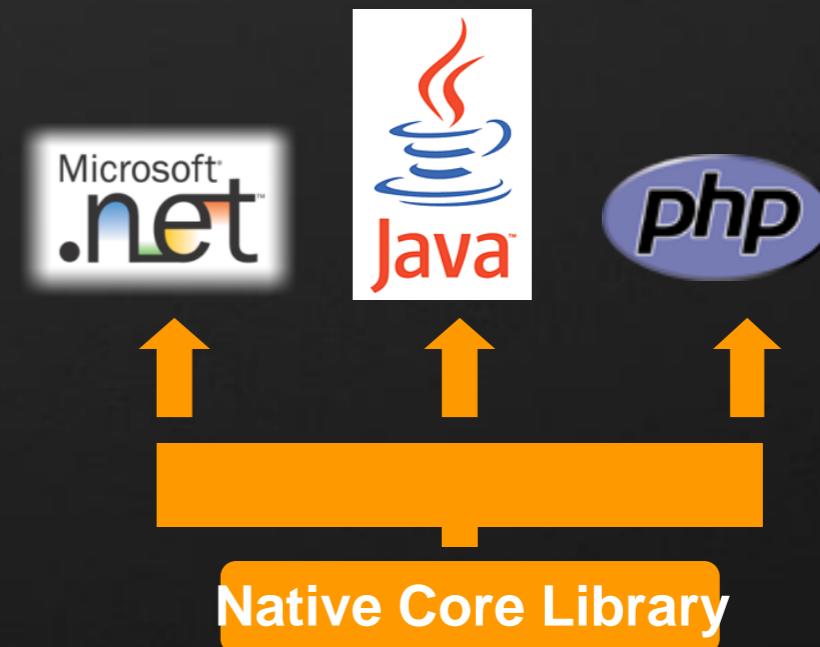
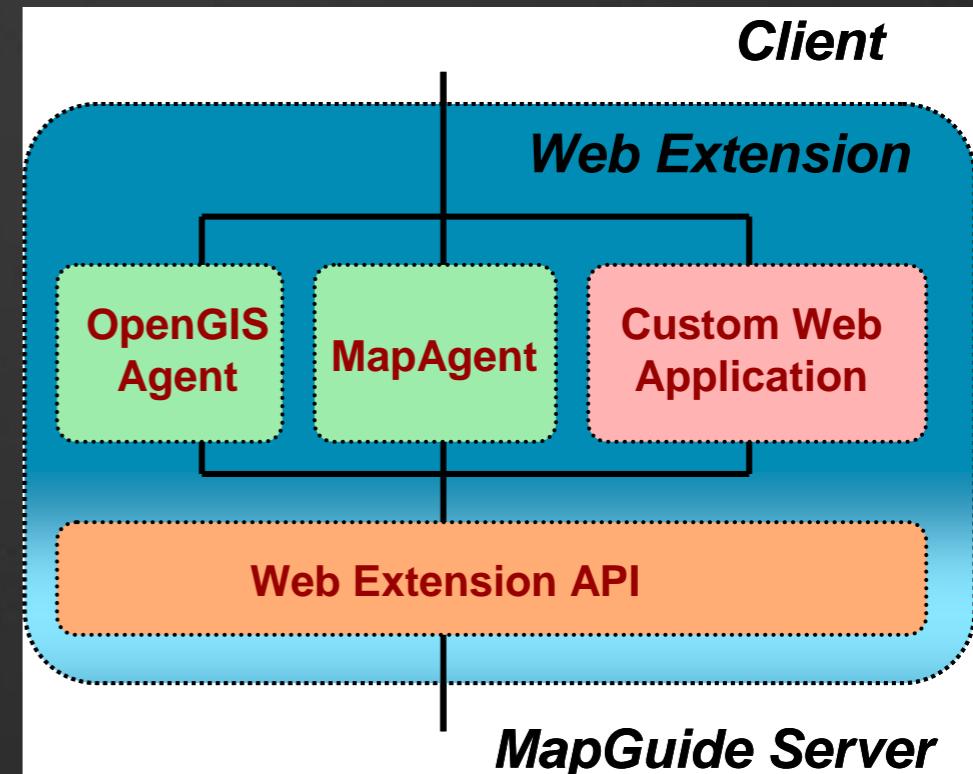


System Architecture



Web Tier

- Web extension is a customizable interface that exposes the services from the MapGuide Server to the web.
- MapAgent is the gateway used by viewers to access the GIS services.
- OpenGIS Agent exposes services in WMS and WFS formats.
- Custom web application incorporates the GIS business logic.
- Web tier runs on top of supported web server or application server such as Apache, IIS, Tomcat, and so on.
- 3 APIs, .NET, Java, and PHP



MapGuide Viewer

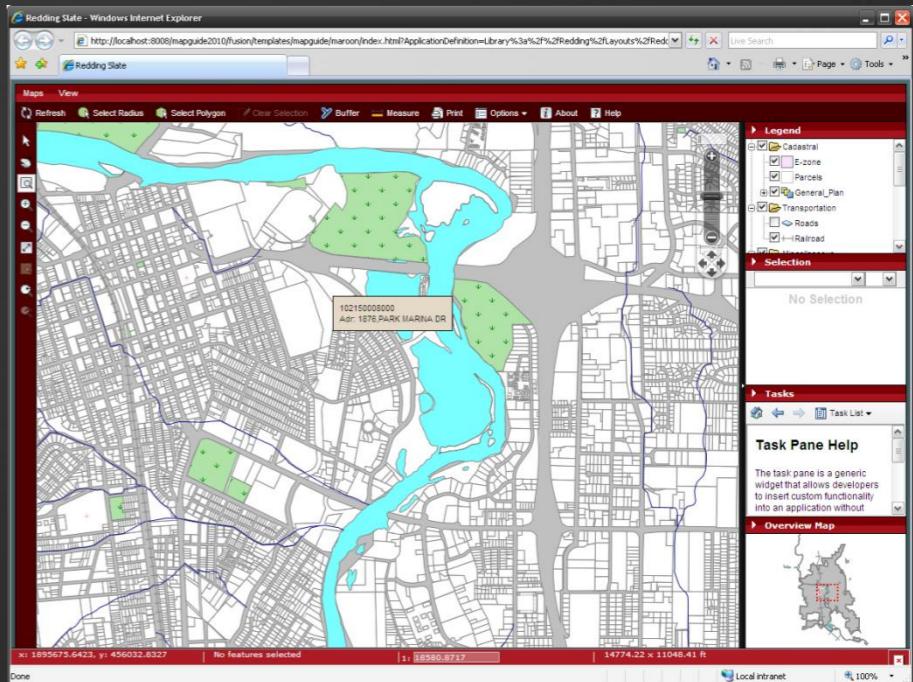
- out-of-box functionality.
 - Pan/Zoom/Distance/buffer/Attribution information display...
- No programming is needed by default.
- Two options available:

AJAX Viewer

- Based on HTML, JavaScript, and XML
- Not ActiveX control
- No download required

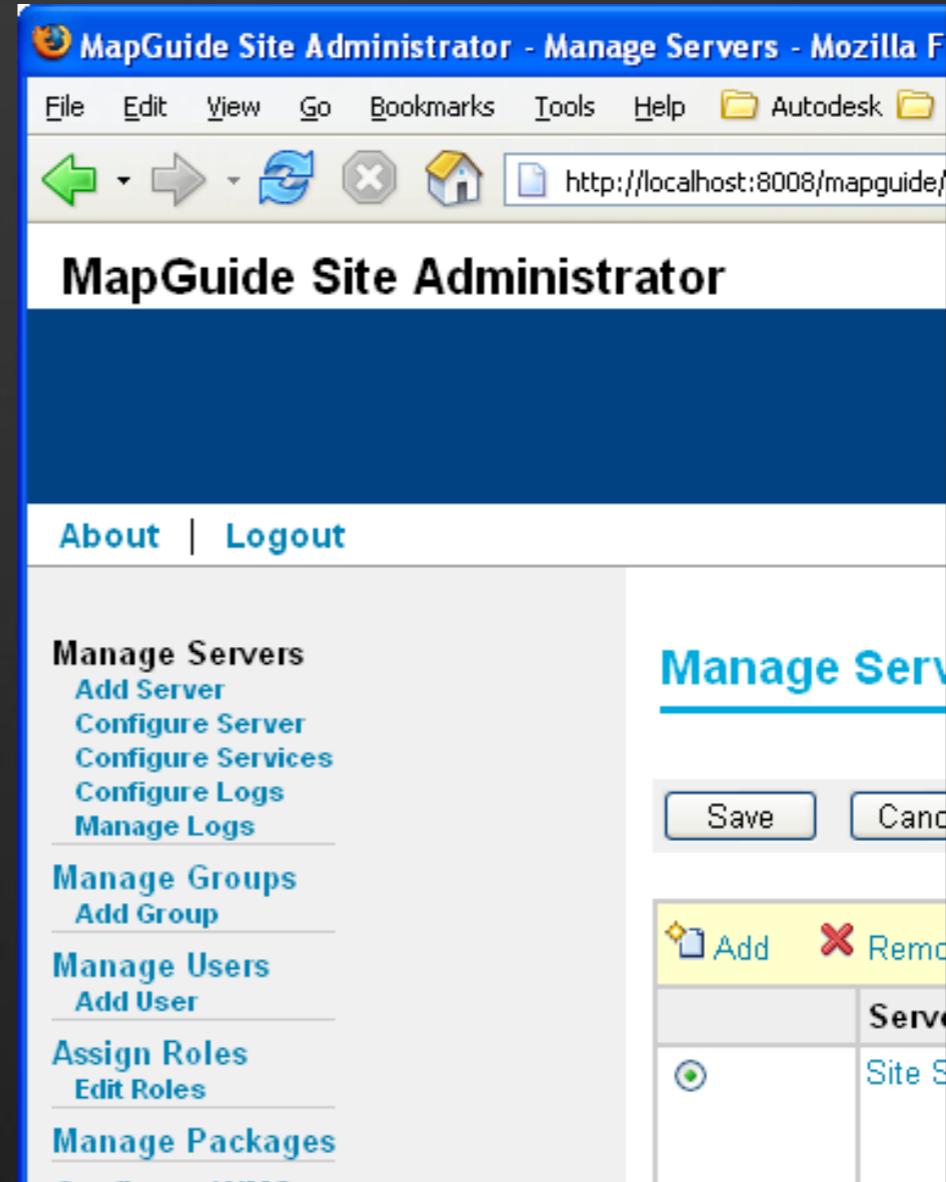
Fusion Viewer

- Based on AJAX technology
- Powerful functionalities from widgets
- Multiple templates
- Out of box experience
- Customizable



MapGuide Site Administrator

- Web-based administration tool
 - Manage the site and servers
 - Administrate services.
 - Manage users
 - Monitor running status
 - View server logs
-
- <http://localhost/MapServer/MapAdmin/login.php>



Package Management

Load Package

- Data package can be loaded to the server
- Copy the *.mpg file to the package directory and click on the Load Package link.

Make Package

- Data repository on the server can be packaged and loaded on another site
- Specify the folder name, i.e., //Exercise/Layouts
- All the data under this path will be packaged

Make Package

You can package a section of this site repository and store Configure Packages directory.

Folder name (e.g. //<root_folder>/<folder1>):

Resulting package name:

Make

Load Package

Packaged resources or data in the package folder can be lo Configure Packages directory.

 [Load Package](#)  [View Log](#)  [Delete](#)

	Package Name
	Sheboygan.mgp

MapAgent Test Page

- MapAgent test page enables you to run quick tests on the server APIs.
- It's organized by service types.
- No programming required.
- It uses mapagent.fcgi which is also used by map viewers.

http://localhost:8008/mapguide/mapagent/ - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Address http://localhost:8008/mapguide/mapagent/

Operation: ENUMERATE

Version: 1.0.0

Locale: en

Resource ID: Library://

Type:

Depth: -1

Submit Reset

Resource service API

- [Resource service API](#)
- [Drawing service API](#)
- [Feature service API](#)
- [Mapping service API](#)
- [Rendering service API](#)
- [Tile service API](#)
- [Site service API](#)
- [Server Admin service API](#)
- [Miscellaneous API](#)

Miscellaneous API

- [UpdateRepository](#)
- [CopyResource](#)
- [DeleteResource](#)
- [EnumerateResourceReferences](#)
- [EnumerateResources](#)
- [GetResourceContent](#)
- [GetResourceHeader](#)
- [MoveResource](#)

<http://localhost/mapserver/mapagent/index.html>

OpenGIS Agent

- MapGuide is OpenGIS-compliant.
- Publish WMS and WFS services out of box
- No programming required
- Easy configuration with Site Administrator



MapGuide Site Administrator

[About](#) | [Logout](#)

Configure WMS

[Manage Servers](#)
[Add Server](#)
[Configure Server](#)
[Configure Services](#)
[Configure Logs](#)
[Manage Logs](#)

[Manage Groups](#)
[Add Group](#)

[Manage Users](#)
[Add User](#)

[Assign Roles](#)
[Edit Roles](#)

[Manage Packages](#)
[Configure WMS](#)
[Configure WFS](#)

[Save](#) [Cancel](#)

General Properties

Name:	OGC:WMS
Title:	MapGuide WMS Service
Abstract:	MapGuide WMS Service
Fees:	none
Access constraints:	none
Keywords:	GIS, WMS, Server
Server name:	localhost:8008
Script name:	/mapguide/mapage

Key Service Configurations

Site Service:

- Session timeout
- Session timer interval

Feature Service

- Data connection pool
- Pool size
- Data cache size

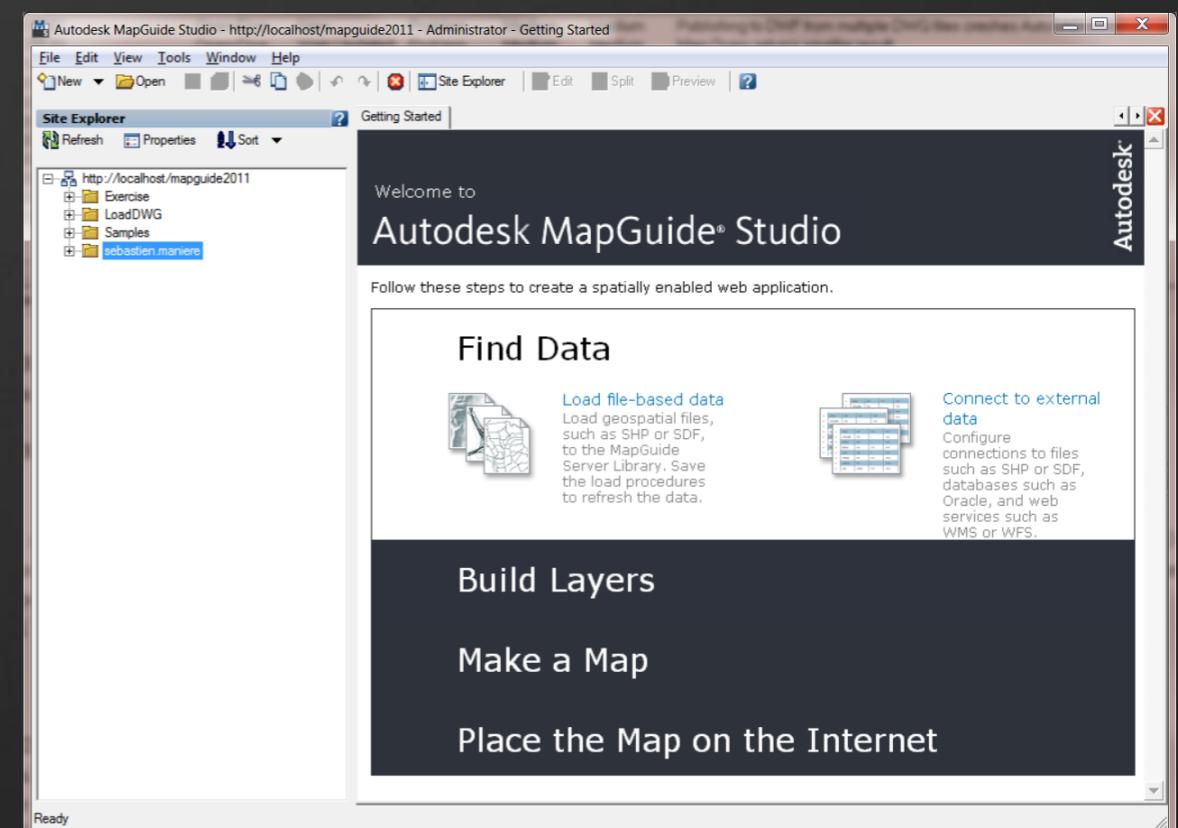
Tile Service

- Tile cache path

Site Service	
Session timeout (seconds):	1200
Session timer interval (seconds):	400
Feature Service	
Data connection pool enabled:	<input checked="" type="checkbox"/>
Data connection pool size:	100
Data connection timeout:	600
Data connection timer interval:	60
Data cache size:	100
Tile Service	
Tile cache path:	C:/Program Files/Autodesk/M
Resource Service	
Data file trash folder:	Trash/
Library data file folder:	C:/Program Files/Autodesk/M
Library repository folder:	C:/Program Files/Autodesk/M
Session data file folder:	C:/Program Files/Autodesk/M
Session repository folder:	C:/Program Files/Autodesk/M
Site repository folder:	C:/Program Files/Autodesk/M
Resource schema folder:	C:/Program Files/Autodesk/M

Autodesk Infrastructure Studio

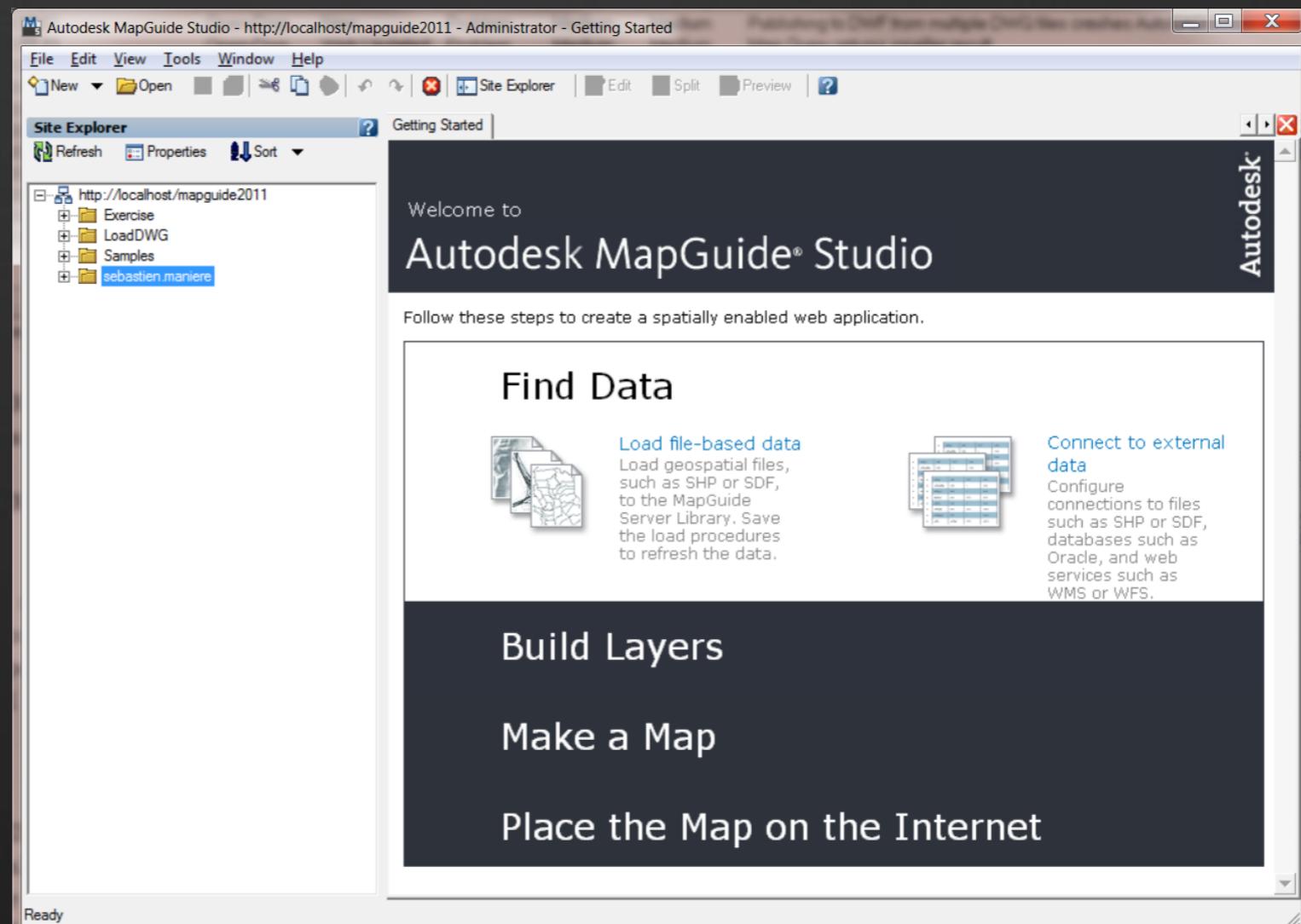
- Map authoring environment for Autodesk MapGuide Enterprise.
- Load Map data resources
- Build feature style and layer theme
- Compile layers into map display
- Manage web layout in browser
- Significantly ease the job of map creation and publication.



Infrastructure Studio Demo

Key concepts:

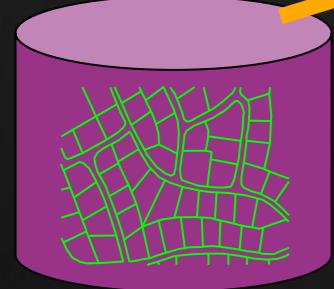
- Load procedure
- Data connection
- Layer
- Map
- Web Layout
- Print Layout
- Symbol Library



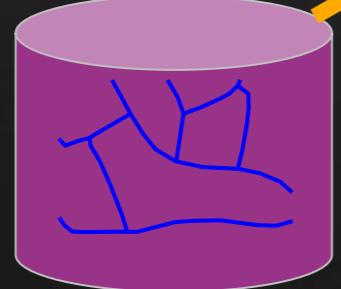
FDO Data Access Technology

Access spatial data from many popular formats, databases, and web services

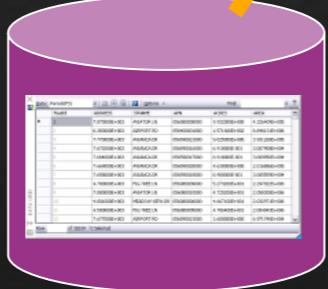
Natively access data from multiple spatial sources



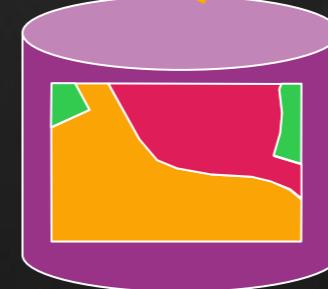
Parcel data from Oracle® databases



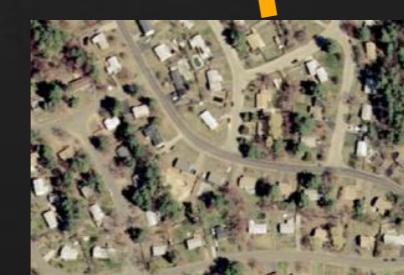
Utility data from an SDF file



Property data from Microsoft® SQL Server™



Zoning data
ESRI® ArcSDE®
ESRI SHP file



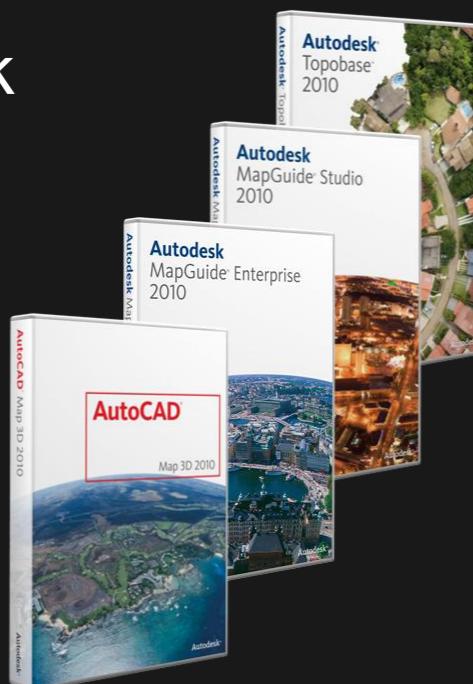
Aerial photos



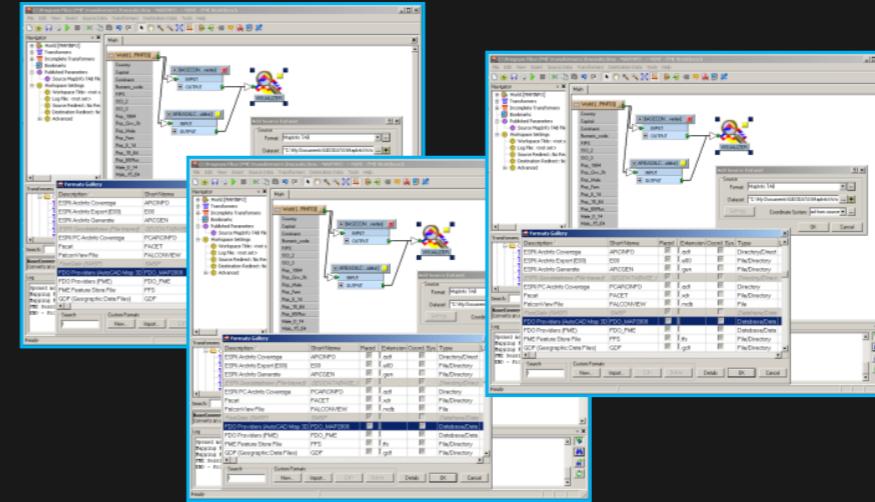
OGC WMS
OGC WFS
Autodesk

FDO Data Access Technology

Autodesk Products



Third-Party Solutions



Autodesk Certified Providers

Providers supporting **multiple formats**

ODBC

MS Access®, Excel®, and Oracle

Raster

15+ raster formats

ArcSDE®

Oracle and SQL-Server

Providers from 3rd Party & Open Source



150+ vector and raster formats

OGR

25+ vector formats



25+ raster formats

Providers supporting **single format**

SDF

Microsoft® SQL Server 2005

Microsoft® SQL Server 2008

SHP

ORACLE®

GE Energy Smallworld

WMS

MySQL Sun Microsystems

WFS

PostGIS/SQLlite

PostGIS

ORACLE®

Microsoft® SQL Server 2005

SuperMap

IBM formix Dynamic Server

KML

Autodesk®

Questions

Questions ?

Exercise1

- Install and configure AIMS on Windows
- Load Procedure to create data source
- Create layer, stylization
- Create Map
- Create Basic WebLayout
- Create Flexible WebLayout
- Create Flexible WebLayout with Google Map as base map
- Load/Make package

Exercise2(Optional)

- [Configure External Files](#) [Add Alias](#)
- Data Connection create data source
- Create point feature from XY using ODBC Data provider
- Data source join and calculations