Lab Assignment 4 – Basics of ArcGIS Server

Due Date: 01/19/2012

Overview

This lab assignment is designed to help you develop a good understanding about the basics of ArcGIS Server and how it works. You will go through the entire process of creating and publishing a Web GIS application.

Data to be used:

You are going to use a variety of data about the State of Maryland including:

- MD_Bnd.shp: state boundary
- MD_Cnty.shp: county boundary
- MD_FireStations.shp: fire stations
- MD_Hospitals.shp: hospitals
- MD_PoliceStations.shp: police stations
- MD_Schools.shp: all schools of different levels
- MD_Highways.shp: highways

Suppose you work for FEMA, it will be very helpful to make these data available on the Web in order to raise the awareness of emergency resources in the State of Maryland. Certain GIS functions can be added to further facilitate the use of these data. That is exactly what you need to do in this lab assignment.

The data can be downloaded from ELMS. It is also saved on the server under the folder – "C:\Workspace\Geog677\Winter2012\Labs\Lab4\".

Part I: Getting to Know ArcGIS Server: An Example

ArcGIS Server is a complete and integrated GIS that provides a set of software components and a framework for developing centrally managed GIS applications. It allows users to distribute maps and GIS capabilities over the Web.

ArcGIS Server has become increasingly popular because of its flexibility (Java or .NET) and versatility (not just Web mapping, but also geoprocessing, editing, and support most ESRI extensions such as Network Analyst.). Therefore, it is important to develop a good understanding about this technology.

Your first task is to read the two documents – "ArcGIS Server Concepts and Terminology" and "Intro to ArcGIS Server" which I posted on Blackboard under **Course Documents > Module 5**.

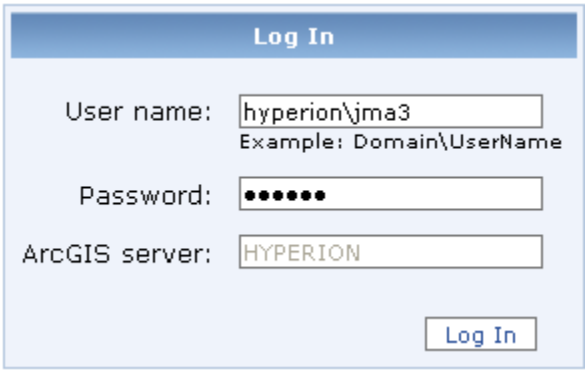
You should be able to answer the following questions:

1. What are the components of the ArcGIS Server system?
2. What is SOM?
3. What is SOC?
4. What types of GIS services can you publish?
5. What are the clients that can use GIS services?
6. What are the three steps to enable Web GIS?

Before you can publish GIS services, you must establish an administration connection to the ArcGIS server. This means that the account you use to connect to the server must be a member of the ArcGIS Server Administration group (i.e. agsadmin).

I have already assigned you with an "agsadmin" role on the server. To connect to the ArcGIS server, you will follow the procedures below:

1. Go to this link: http://129.2.24.163/ArcGIS/Manager/
2. For the user name, type in "hyperion\user_id". You will replace the "user_id" with your own email id.
3. If you took Geog788R (Web Programming) last fall, you can use the same password to login. Otherwise, you should use the password - "Geog677_W12 ". (You must change the password immediately after login. Be sure to remember it because I will not be able to retrieve it if you forget.)



Note:

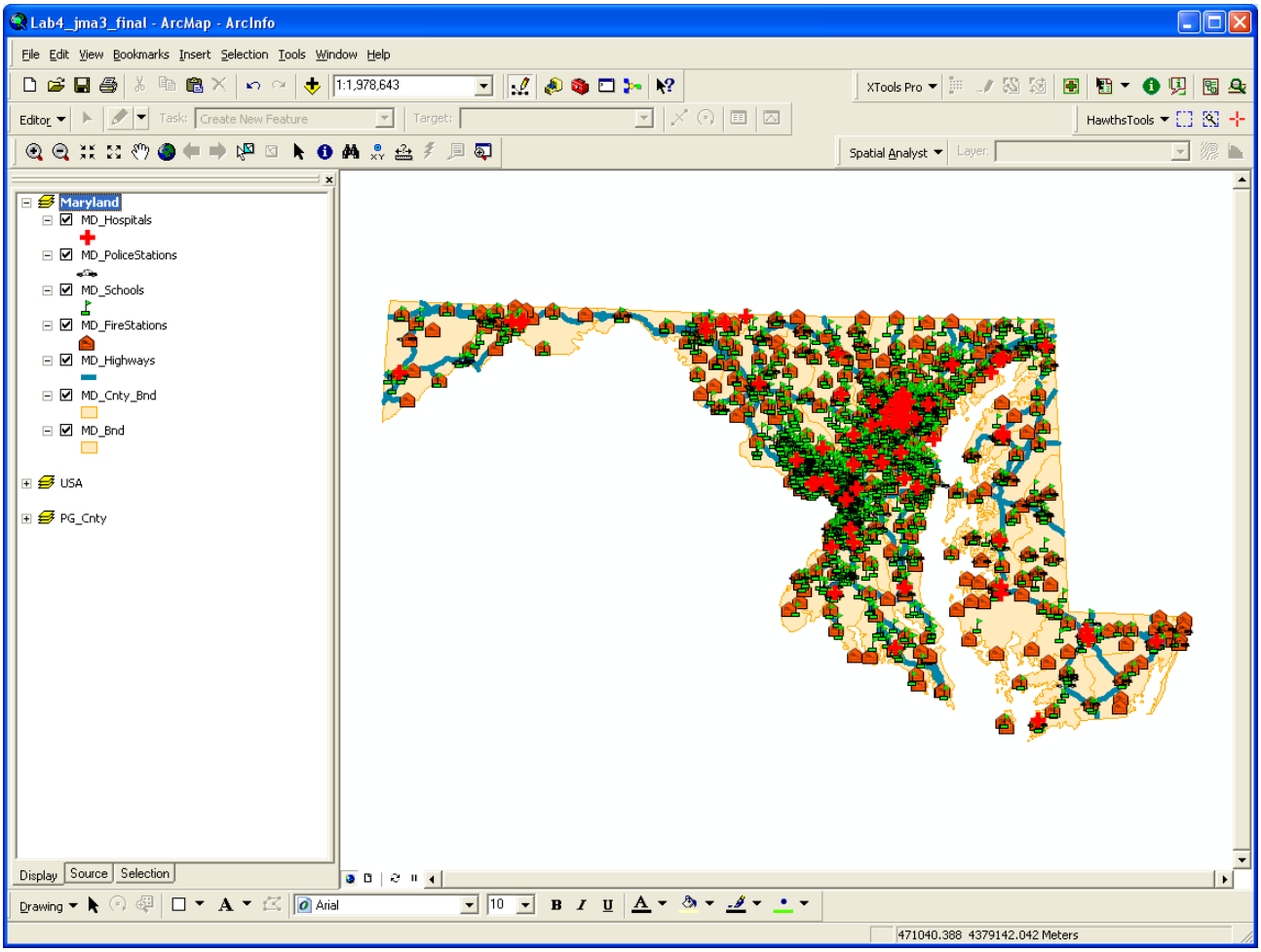
- Before you try to login the ArcGIS Server Manager, you must use Remote Desktop to login to the server first, which will activate your "agsadmin" role.

This is an example: http://129.2.24.163/Lab4_jma3_demo/ In Part II, you will use a different dataset to create your own application which must meet some minimum requirements but have room for you to be creative.

Part II: Getting Started with ArcGIS Server

Your tasks and the requirements are:

- Go to ELMS, download the data if you want to create the map document on your local computer.
- Unzip the data and save them on your local computer.
- Launch ArcMap and add the data layers.
- Define the symbology.
    - You can be creative here. However, your map must meet the following minimum requirements:
        - You must set certain data layer as semi-transparent.
        - You must define and apply scale range for at least one feature layer.
        - You must define and apply scale range for the labeling text of at least one feature layer. (Don't forget to turn on the labels first.)
        - You also should use the meaningful icons/symbols to represent those features. An example is shown below.



- Save the map document.
    - Make sure you set the data source using relative paths. (In ArcMap, click File > Document Properties… > Data Source Options… and then check the option to store relative path names to data sources.)
    - The map document must be named as "Lab4_userid" where the userid should be replaced with your own.
- Upload the map document to the server through Remote Desktop. Make sure you save it under the folder – "C:\WorkSpace\Geog677\Winter2012\Labs\Lab4\". Then, open it and make sure it works fine. If the map layers are missing, you need to repair the data sources.
- You will create a Web application.
    - You can be creative in terms of defining some settings or adding new tasks. However, your application must meet the following minimum requirements:
        - You must include these two tasks: Query Attributes, Search Attributes, and Print.
        - You must customize those default ESRI links.
        - You must modify the copyright information and include your name in it.
- Once you finished creating the Web application, you need to create a Word document in which you should write down the URLs of your Web pages and then a few screen shots.
    - The URL should be like this: http://129.2.24.163/Lab4_userid (replace the userid with your own.)
    - You need to test to make sure the Web application works fine before sending out the URL.
- Submit the lab report through Lab 4 on ELMS. The deadline is 01/19/2012.

You can also directly create the map document on the server using ArcMap because the data has already been saved under the folder - "C:\WorkSpace\Geog677\Winter2012\Labs\Lab4\". That way, you don't have to upload the file.

Again, as a reminder, you can be creative as long as your result meets the minimum requirements indicated above.

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