CONDUCTING AN ARCIMS SITE

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Abstract

Conducting An ArcIMS Site

To efficiently manage an ArcIMS site, developers should seriously consider a tool such as the ArcIMS Control Panel (ACP).

The ACP facilitates rapid, effective adjustments to an ArcIMS site that will meet user requirements and deliver a first-class product. Using the analogy that an ArcIMS site is a symphony, the ACP should be considered the conductor. The ACP gives a user the ability to manage imagery, available tools, data display settings and modifications to an .mxd that is connected to an ArcIMS map service, including adding a layer.

Using web-based forms, the ACP manages information contained in an ArcIMS Controller Database (comparable to the conductor's sheet music) separated from the geo-database. This database contains tables with layer information; layer attribute display; query and visibility settings; selectable layer information; and available tools. This information is then referenced throughout the code that runs the ArcIMS site.

Conducting an ArcIMS Site

ESRI's ArcIMS (Internet Map Server) software provides the web based ability to view, query, and print data and maps from a GIS data source. The strengths of an ArcIMS web site include distribution of the application to a large audience (over the Internet), minimal training requirements, and a relatively low cost per user. A standard ArcIMS site can be very effective in providing access to GIS data; however, significant customization of an ArcIMS site requires a good deal of programming expertise.

An analogy can be made between an ArcIMS site and a symphony. A composer creates different layers of music that comprise the symphony that can then be played for a larger audience. An ArcIMS site can be composed of different geographic features and attributes put together in a map document (.mxd) and made accessible (played) through an ArcIMS site's tools. Using this analogy the ArcIMS Control Panel should be considered the conductor. The ArcIMS Control Panel gives a standard GIS user (non-programmer) the ability to manage a customized ArcIMS site.

ArcIMS map services can be created based on an ArcMap map document. Map documents are created using ESRI ArcGIS software and are directly connected to the map service through the ArcIMS administration console. The ArcIMS site refers to this map service for the map image, features and feature attributes. An ArcIMS site may have many different looks but generally it is broken into a few separate components (see example below).
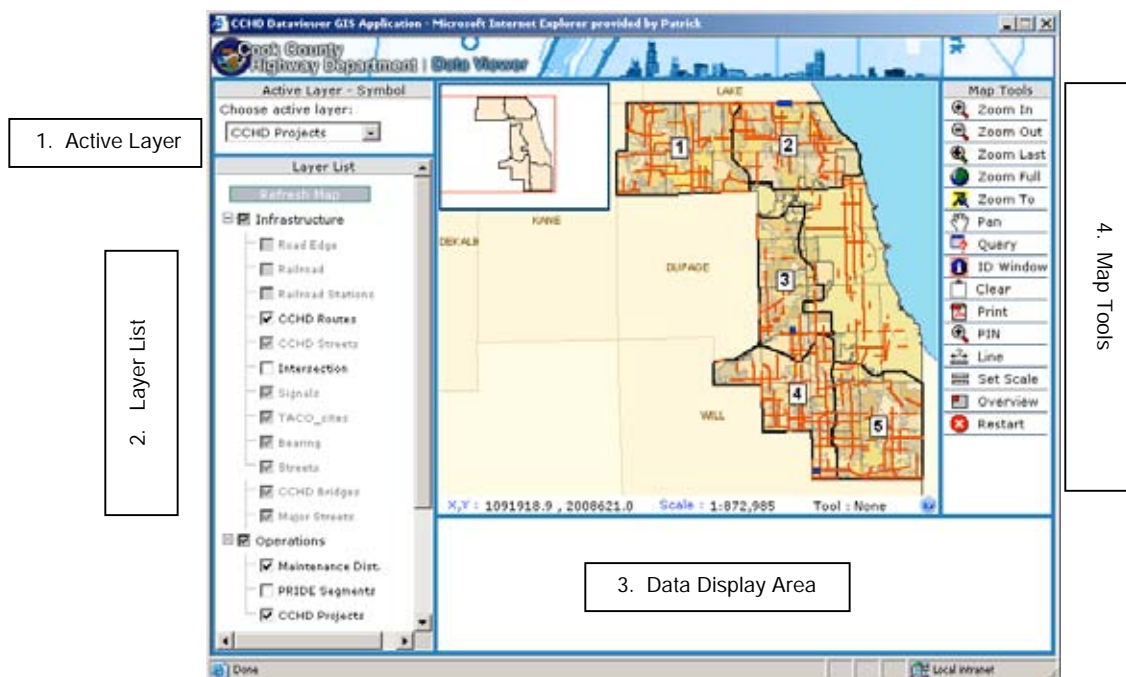

1. **Active Layer**
   The dropdown list under *Choose active layer* contains a list of active layers in the ArcIMS site. By changing the active layer the map image is refreshed and the newly selected layers' features can be identified and or queried.

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2. **Layer List**
    The tree view layer list contains all the layers in the ArcIMS site. Each layer can be turned on or off by the user checking or un-checking the checkbox left of the layer name. The *Refresh Map* button must be clicked before viewing any changes. A grayed-out layer informs a user that the layer is not visible at the scale that the map image is currently set to. (See the figure below). Turning all the layers in a category on or off can be accomplished by clicking on the parent check box. A parent whose checked box is grayed out indicates that only some of the children layers have been turned on.
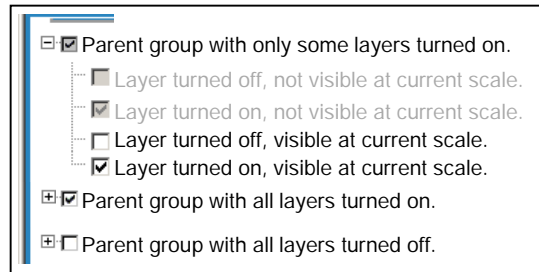
    Layer List Tree Descriptions

3. **Data Display Area**
    When a feature or set of features is identified or queried the resulting attribute data is shown in a table in the data display area. Tools such as *Print* and *Zoom To* are also available in the data display area.

4. **Map Tools**
    This area displays all available tools for the ArcIMS site.

ArcIMS Control Panel

The ArcIMS Control Panel provides an easy to use tool to manage the way the ArcIMS site components operate and how data is displayed. The ArcIMS Control Panel is a web based forms application that populates a database that is then utilized as the back-end of the code within ArcIMS site pages. The ArcIMS Control Panel is like the conductor of the ArcIMS site, guiding the delivery of the data-features, and increasing the effectiveness of the output.

ArcIMS Control Panel offers the ability to set layer properties (including quick zoom), set feature attribute display properties and descriptions, create legend imagery, and set available tools. Once a map service is connected to a map file (.mxd) and created, all layers are loaded through a simple web form into the ArcIMS Control Panel. Once a layer is loaded layer properties such as layer description (available through the layer list), active setting (active layers dropdown), layer group name, display name (shown in the layer list), quick zoom properties and individual attribute settings can be set in one easy to use web form. Individual attribute settings include; display name, order in result sets, visibility in results of map queries and identifications, descriptions, and visibility in reports. The visibility set on each attribute within a layer determines the order and attribute fields that are displayed on a return of an ID, or query function in the ArcIMS site. This is very helpful when using spatial database engines that include auto-generated fields such as OBJECTID in all features, a field that has little or no use to a user of an ArcIMS site. In addition, some attribute names are based on monikers or abbreviations and having the ability to display a more descriptive name and order the display of attributes adds great value to the user experience (music to the ears!). All legend and layer symbols are entered through a form into the Control Panel giving the user the ability to copy symbols off of a map document (.mxd), create new symbols, and create symbol groups and symbols within those groups. This allows for the ArcIMS legend not to rely directly on the map document (.mxd) set of symbology. For example, when a layer uses colors/symbology only to differentiate feature borders (ie. municipalities in a county) these separate symbols can be grouped and shown as a single legend symbol. The Control Panel gives the ability to set what tools are available to users. Some instances call for user based tools or a gradual implementation of tools within a customized ArcIMS site. The ability to turn tools on and off gives a way to manage this kind of requirement.

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An ArcIMS site is like a symphony and the ArcIMS control panel is the conductor. Without good data (notes, music) and the creation of well thought out (.mxd) map file (sheet music) the value of any ArcIMS site is very limited. With good data and a well constructed .mxd an ArcIMS can be a very effective way to allow a large audience the ability view, query, and print a set of GIS data. . Implementing a way to control a customized ArcIMS site without additional programming gives a result that provides users with an even more effective and efficient GIS experience.

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