SuperMap GIS Data Management

SuperMap GIS organizes data through workspace, datasources, datasets, maps, scenes and layouts.

SuperMap GIS manages data through a hierarchical tree in the Workspace Manager. The tree hierarchy indicates how data is organized in the workspace. For SuperMap GIS 6R products, you can open only one workspace at a time. Each time you open a workspace, a root node corresponding to the workspace is generated in the Workspace Manager. Under the root node, child nodes for datasources, maps, scenes, layouts and resources are generated for data management in the workspace.

Datasources: manages all datasources in the workspace. A datasource can contain a set of datasets of different types.

Maps: manages all maps in the workspace. A map can be saved into the workspace for future use.

Layouts: manages all layouts in a workspace. A layout is where layout elements are placed for export or printing.

Scenes: manages all scenes in the workspace. You can save a scene into the workspace for future use.

Resources: manages Maker Symbol Library, Line Symbol Library, and Fill Symbol Library, in which you can select symbols to draw points, lines and regions.
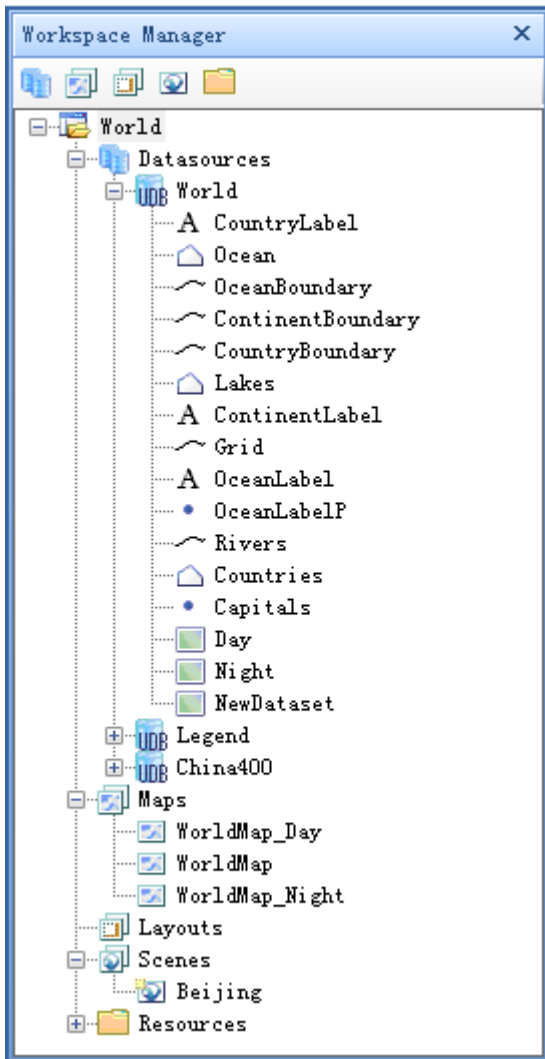
Figure: Workspace Manager (left) and data management (right)

Please follow the links below to get more detailed information:

Workspace

A workspace is where you work with your data. A workspace must be created first before any operations. All of your work, such as the datasources opened, maps, layouts and scenes you configured, etc., can be saved in a workspace for future use.

Any time you start the application program, an empty workspace is created for you to add data or open an existing workspace.

Workspace Types

According to how workspaces are stored, there are two types: file workspace and database workspace.

A file workspace is a workspace stored in file, with either an .smwu, .sxwu. SuperMap GIS 6 and previous are *.smw and *.sxw. A database workspace is a workspace stored in the database. Currently, a workspace can only be saved in an oracle or SQL Server database.

Hierarchical Structure of Workspace

A workspace manages all datasources, maps, layouts, scenes and symbol libraries in it in a tree hierarchy. Datasources, Maps, Layouts, Scenes and Symbol Libraries together construct the first level of the workspace tree. In a workspace, Datasource manages all opened datasources, Maps manages all maps, Layouts manages all layouts, Scenes manages all scenes and Resources manages Marker Symbol Library, Line Symbol Library and Fill Symbol Library.

The existance of maps, layouts, scenes and symbol libraries in a workspace relies on the workspace. Once the workspace is deleted, they will also be deleted. However, datasources in a workspace will not be deleted when the workspace is deleted because datasoruces are stored independent of the workspace.

Note:

1. The default SuperMap Deskpro 6R and SuperMap iDesktop 9D workspace file is .smwu file. The .sxwu file is the the workspace file in XML format, which can be opened with notepad for in-depth information about datasources, maps and resource files, etc. in the workspace to configure other workpaces, especially map styles. You can save an .smwu workspace file to .sxwu file.
2. Workspace file with *.smwu, *.sxwu, *.smw and *.sxw extensions are supported in SuperMap Deskpro 6R and SuperMap iDesktop 9D . SuperMap Deskpro 6R can save workspace as *.smwu, *.sxwu, *.smw and *.sxw. SuperMap iDesktop 9D can save workspace as *.smwu and *.sxwu.
3. If the opened workspace is .smw or .sxw extensions, results based on new functions provided in SuperMap iDesktop 9D products, such as compound label thematic maps, will be lost. You can save the workspace as SuperMap UGC 6.0 or 7.0 to save corresponding operations.
4. The .smw files are workspace files for SuperMap GIS 6 products or earlier versions. Files with .sxw extensions are the corresponding XML files for the .smw workspace files.
5. Workspace files with .smwu and .sxwu extensions are not supported in SuperMap GIS 6 products or earlier versions.

Datasources

Datasources Node

The Datasources node in the Workspace Manager manages all opened datasources in the workspace. A datasource can contain a set of datasets of different types. You can create, open, close datasources through the commands provided in the context menu for the Datasources node.

Datasource

A datasource stores spatial data independent of a workspace. As to SuperMap iDesktop 9D products, datasources can be stored in local or online files or databases. Based on how and where datasources are stored, there are three types: file datasoruce, database datasource and web datasource.

1. **File Datasources**, namely, the UDB datasources, are stored in an *.udb or *.udd file. When creating an UDB datasource, an .udb file and a corresponding .udd file are generated. And when creating a UDB datasource, a .udb file and a corresponding .udd file will be generated.

   GIS spatial data include spatial geometry objects and their properties. In a file datasource, an *.udb file mainly stores the geometry information of spatial data. An *.udd file stores the properties information. A datasource file only corresponds to a datasource.

   A UDB datasource is a cross-platform file datasoruce that supports efficient access to massive data. A UDB datasource can store 128TB of data at most.

2. **Database Datasources** are datasources stored in databases, such as Oracle Plus databases and SQL Server Plus databases. Both the spatial information and attribute information of the database datasource are stored in databases.

   To operate data in a datasource, you must open the datasource first. All operations conducted on the datasource are directly saved to the datasource instead of the workspace because the datasource is stored independent of the workspace and the workspace only provides the reference to the datasource. Presumably, a datasource will not be deleted when the workspace is deleted.

3. **Web Datasources** are stored on web servers and accessed through URL addresses.

You are permitted to open different types of datasources in a workspace. Often, spatial data for a certain use is organized in the same datasource to facilitate efficiency.

Dataset

Geographic features are representations of things located on or near the surface of the earth. Geographic features can occur naturally (such as rivers and vegetation), can be constructions (such as roads, pipelines, wells, and buildings), and can be subdivisions of land (such as counties, political divisions, and land parcels). We use datasets, collections of geographic features of the same type, to represent a geographic area. For instance, we use point

datasets, collections of points, to represent geographic features too small to be depicted as lines or polygons, such as well location, telephone poles, and buildings. We use line datasets, collections of lines, to represent geographic features too narrow to be depicted as areas, such as streets and streams, or slices through a surface, such as contours. And we use region datasets, collections of closed figures, to represent the shape and location of homogeneous features, such as states, counties, parcels, soil types, or land-use zones. Therefore, a datasource consists of a set of datasets of different types. Actually, except for representing a geographic area with point datasets, line datasets, and region datasets, many other dataset types are also employed to represent the information in the geographic area. These datasets include: tabular datasets, network datasets, CAD datasets, text datasets, lineM datasets, image datasets, and grid datasets.

A dataset is a basic unit for spatial data organization, and can be displayed in a map window as a layer. You can edit a dataset in a map window, such as move the geometric objects to a new position, obtain a line dataset through vectorizing an image dataset, etc.

Maps

Maps Node

The Maps node in the Workspace Manager manages all maps in the workspace. A map can be saved into the workspace for future use.

You can open several map windows at the same time to display maps. Maps cannot exist independent of the workspaces. Therefore, you must save a workspace if you want to save the maps in the workspace.

Map

Every time you add a dataset to a map window, a layer referencing the dataset is created and displayed in the map window. A map is composed of a set of ordered layers. Generally, a layer references only one dataset while a dataset can be added to a map for several times with different drawing styles. For datasets originally have no drawing styles, such as point datasets, line datasets and region datasets, they will be assigned with default drawing styles. For datasets with drawing styles, such as CAD datasets and text datasets, they will be drawn in layers with their own drawing styles. The drawing style of a layer can be changed through changing the layer style or creating thematic maps. Besides, you are permitted to edit geometric objects in a layer, such as changes the position,

size, shape, etc. of an object. You may notice that your operations in a layer will be reflected in the dataset the layer references. That is because when you are editing a layer, you are essentially editing the dataset the layer references.

Layouts

Layouts Node

The Layouts node in the Workspace Manager manages all layouts in the workspace. You can create, save, export, print and delete layouts through commands provided in the context menu of the Layouts node.

Layout

A layout is used for map layout. You can add map elements, such as the map, scale, legend, north arrow, title, etc., to complete a map and you are permitted to edit the properties of those elements in a layout window.

Since a layout cannot exist independent of a workspace, the workspace on which the layout relies must be saved if you want to save the layout for future use.

Scenes

Scenes Node

The Scenes node in the Workspace Manager manages all the scenes in the workspace.

Scene

A scene models the earth with a globe overlaid with world image. Geographic features on the earth's surface can be simulated on the globe. Scenes can facilitate the understanding of the locations of geographic features and the relationships among them. You can add 2D and 3D data to a scene for browsing and some other basic operations. A scene also models the environment of the earth, including the sky, the atmosphere, the fog, etc. Besides, you can observe the globe from different perspectives through camera settings.

Scenes relies on scene windows. There is a one-to-one relationship between scenes and scene windows.

A scene cannot exist independent of a workspace. Therefore, you must save the workspace on which a scene relies if you want to save the scene for future use.

Resources

Resources Node

The Resources node in the Workspace Manager manages the Marker Symbol Library, Line Symbol Library, and Fill Symbol Library.

Symbol Libraries

The Marker Symbol Library, Line Symbol Library, and Fill Symbol Library respectively provide marker symbols, line symbols, and fill symbols, with which you can draw points, lines, and regions. You can change the properties of a specific. For example, you can change the size, color, etc. of a maker symbol, the width, color etc. of a line symbol, and the fill pattern of a fill symbol.