



PLTS™ for ArcGIS®—Foundation Product Library: Spatially Enabled Document Management System

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PLTS for ArcGIS—Foundation Product Library: Spatially Enabled Document Management System

An ESRI White Paper

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PLTS for ArcGIS—Foundation Product Library: Spatially Enabled Document Management System

The Challenge

Managing spatial data and documents is critical to the success of any geographic information system (GIS) project. During the life cycle of a project, many versions of files, such as databases, map documents, production rules, and outputs, are produced. Managing changes to these files, including knowing which version is the latest and being able to find historical versions if something goes wrong, can be a daunting task. As a result, conflicts may arise with data availability or overwriting critical changes, which can compromise a schedule or budget, introduce unnecessary risks, and jeopardize project success.

Product Library

Current database and file systems, including conventional GIS and relational database management systems (RDBMS), are not well equipped to simultaneously manage project data, business rules, and documents. Product Library is a geodatabase that provides a means for organizing and interacting with the various parts of your project as well as for managing permissions to project files. Product Library maintains file versions and locking when configuring, retrieving, and sharing products (project deliverables). In essence, it can be considered a spatially enabled document management system.

Part of PLTS for ArcGIS— Foundation

Product Library is just one of the many tools within the Production Line Tool Set (PLTS™) for ArcGIS®—Foundation suite of products for improving management, quality, and integrity of spatial data and map/chart products. Foundation is a collection of turnkey software applications for high-volume database production, maintenance, quality control, cartographic product generation, and workflow management.

While Product Library allows you to manage any files associated with your project, the tools used with Product Library focus on creating and managing files for data editing and cartographic production. Product Library can store all the rules that customize PLTS for ArcGIS—Foundation for your data and cartographic specifications.

- **Editing**—Production rules, including validation and attribute display rules, can be stored and configured through Product Library. These rules are used when editing data to ensure features are being collected according to your business rules.
- **Cartography**—Map documents store essential GIS information such as the layout for a cartographic product, area of interest, symbology, and a link to the data. Product Library allows you to easily create multiple maps for various areas of interest from a defined template and maintain the history of changes to each individual map. Additional cartographic rules such as symbology and surround

elements can also be managed to ensure that cartographic documents have consistent symbology.

Key Benefits of Using Product Library

Managing Files and Documents

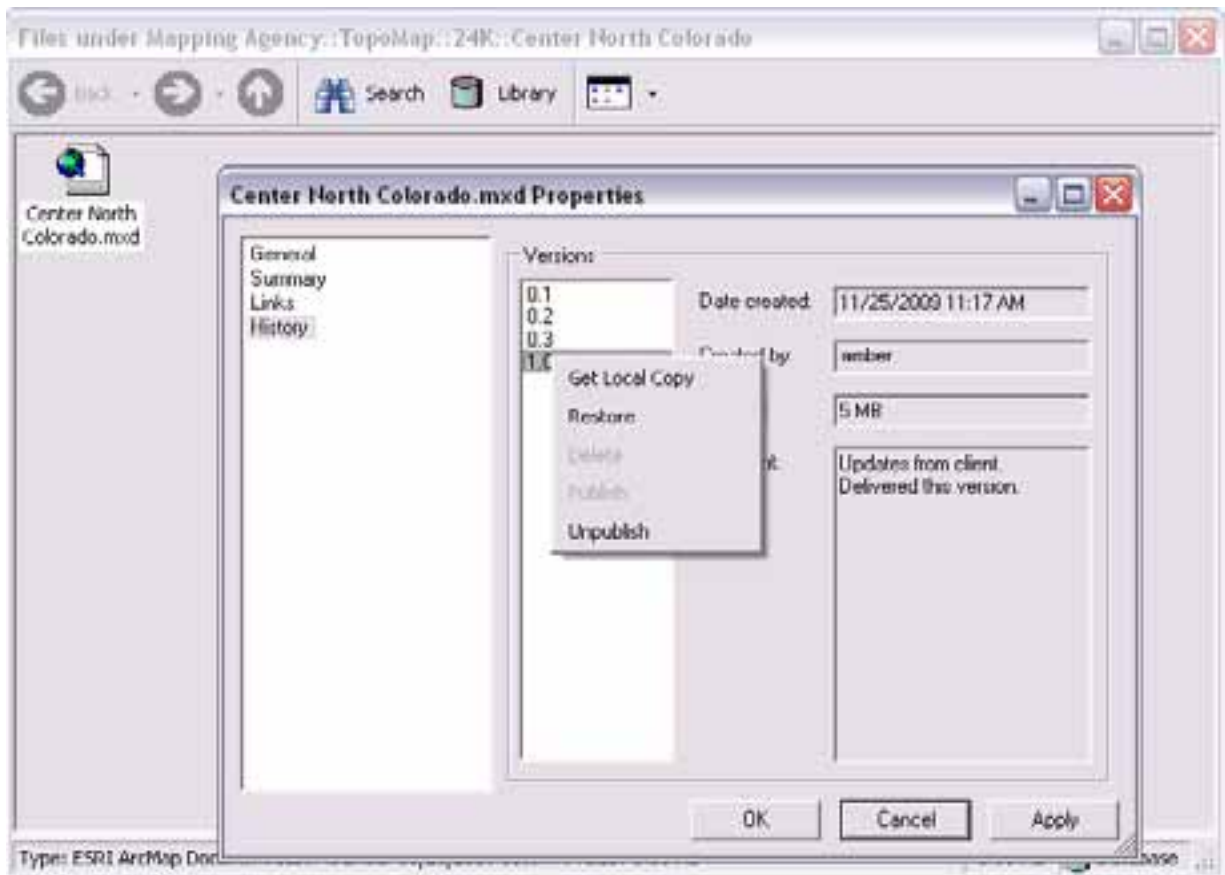
One of the challenges of managing a GIS project is also managing all the associated files. Product Library can be used to store and manage documents that will be used throughout the project life cycle. By storing all project information in a central location, work progress can be monitored with ease and efficiency. Since Product Library can house different file formats, it is possible to maintain a product in any format required by project deliverables.

Files that can be stored in Product Library include, but are not limited to, the following:

Production Phase	Possible File Types
Source management	<ul style="list-style-type: none"> ■ Data model files ■ Business rules ■ Raster or other image files ■ Product specification descriptions ■ Computer-aided design (CAD) drawings ■ Work orders
Production	<ul style="list-style-type: none"> ■ Databases ■ Template .mxd files ■ Individual product .mxd files ■ Grid definitions for the Grid Manager ■ Data validation rules
Export/Distribution	<ul style="list-style-type: none"> ■ Hard-copy map products in any format such as PDF or EPS files ■ Graphics (.jpg, .tif, .gif, and .bmp) files ■ Exported shapefiles ■ Geography Markup Language (GML) files

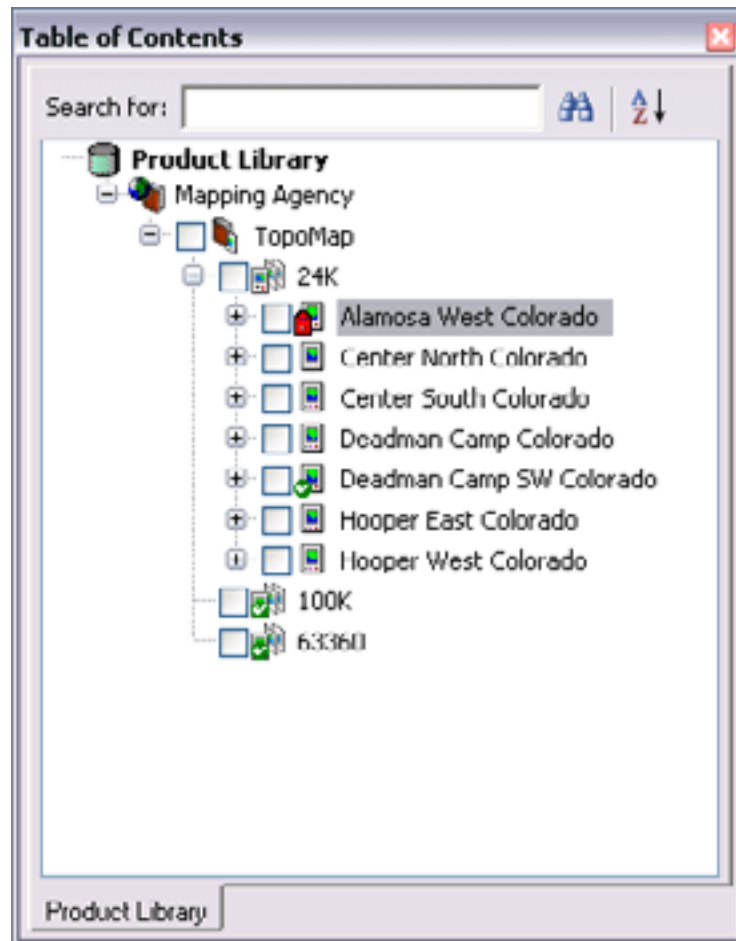
Product Library works as a document management system allowing you to set permissions and maintain file versions. When configuring Product Library, you can assign user permissions to limit which users can check out files for editing and which users can only view files. You are prevented from making changes to products that someone else has already checked out, which helps avert lost changes. When files are checked in, a new version of the file is created to maintain a history of changes to the file. If this is an ongoing project, you can use Product Library to publish versions of files at various stages so you can have a snapshot of a chart or map at a specific time. Managing files in Product Library also allows you to restore a previous version of a file if an inappropriate change was made.

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Product Library manages the history of files by storing versions and allowing you to publish or restore versions.

The Product Library tab in ArcMap™ allows you to view the contents of your product library in a tree structure. Since Product Library is a spatially enabled document management system, it also allows you to view the geographic extent of the products in the library by checking the box next to that component. The icons displayed next to items in the tree structure allow you to quickly see which products are being actively worked on.



The Product Library tree allows you to see the products currently being worked on. The red lock indicates that someone else has the document checked out, while the green check indicates that you have the product checked out.

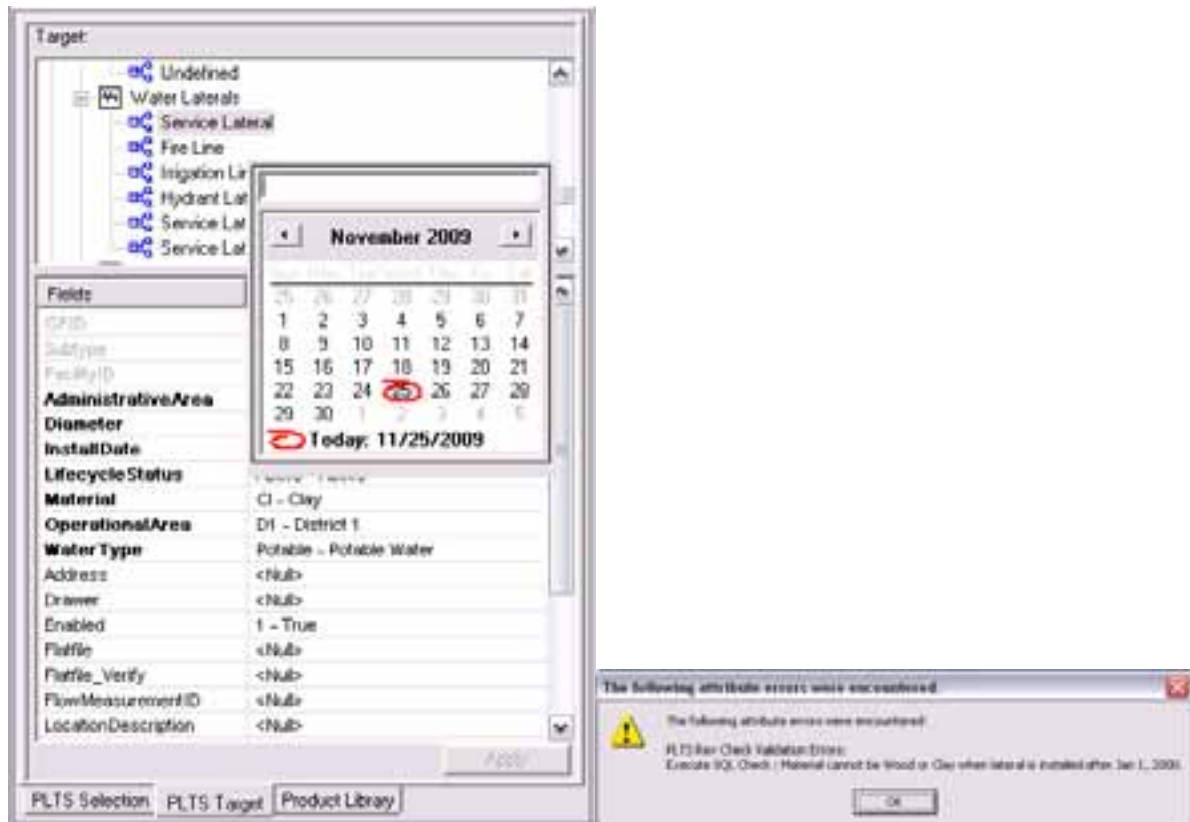
Managing Production Rules

Depending on the project, various types of rules may be configured to ensure consistency and accuracy of the products being created. Production rules can include rules for the database such as schema of the database, validation rules, and attribute display rules. One key reason to store these rules in Product Library is to ensure that all users have access to up-to-date versions of the files.

The production database works in tandem with Product Library and contains the data you are using for production tasks. Depending on the data model you are using, data in the production database can be used to create a digital or hard-copy map or chart or a specific type of data. Different production rules can be associated to Product Library when you use production databases with different schemas or for different purposes.

The editing tools within PLTS for ArcGIS—Foundation, such as the PLTS Target and PLTS Selection tabs, recognize when you are using Product Library and a production database and seamlessly adapt to use your production rules. Attributes in the PLTS Target and PLTS Selection tabs are displayed according to your configurations, so some

fields may be hidden while others are displayed in bold. When editing attributes, custom controls such as a calendar or multi-pick list will be used if you configure them.



Rules for customizing field display through PLTS tools and for enhanced validation are stored in Product Library.

The validation rules that are associated with Product Library will be used to ensure data quality every time you click the Apply button in either the PLTS Selection or PLTS Target tab. These rules allow you to ensure that the attributes of the feature are valid before changes are committed to the database. You can configure standard database validation rules such as ensuring that a value is in a domain as well as enhanced rules such as discontinuous ranges or when one value depends on another.

Managing Cartography

Although Product Library can be used to manage projects in general, its structure can also be used to manage documents within a map series. The files stored in Product Library are broken into a tree structure, which allows certain files to be inherited by default. If you want to create a series of maps using the same layout as a template, the template associated with the parent (series) node will be inherited by all the child nodes that represent the pages in the map series. With more complex products, each product may have a custom page layout, and data frames may have different data sources. In these cases, Product Library can be used to manage all aspects of the product.

Cartographic rules, including symbology and surround elements, can also be managed by Product Library. Many cartographic tools within PLTS for ArcGIS—Foundation, such as PLTS Views and Visual Specifications, use rules that can be stored in Product Library.

Symbology allows you to represent features so they are meaningful to those looking at your map or chart. With the PLTS Views and Visual Specifications tool, you can create consistent, rule-based symbology with cartographic representation. The tool allows you to define the symbol that will be applied to a feature based on that feature's attribute combination and also allows you to use linked attributes from other feature classes or stand-alone tables to determine what symbol will be applied to a feature. Consistent symbology and data visualization can be critical to ensuring the accuracy of the data displayed in your cartographic products.



Storing PLTS views in Product Library makes it easy to apply stored layer symbology.

Views are named groupings of map settings that can be saved and retrieved from Product Library. Views are a quick way of saving layer properties, such as symbology, definition queries, and transparency, as well as data frame properties, such as scale, coordinate system, and layer order. They allow you to decide which layer and data frame properties to apply when the view is retrieved.

Product Library can also be used to store surround elements such as your organization's logo, north arrows, legends, or dynamic tables created with the Graphic Table Element tool in PLTS for ArcGIS—Foundation. These elements can be stored in Product Library and easily added to your map layout without having to search for their location.

For more information, visit www.esri.com/plts or e-mail plts@esri.com.



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