

# What's New in ArcGIS 9.3.1?

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# What's New in ArcGIS 9.3.1?

May 2009

## Highlights

- **Fast and Scalable Dynamic Map Services**

ArcGIS® 9.3.1 can publish fast, scalable maps on the Web using [optimized map services](#). These support both dynamic and cached map services.

- **ArcGIS Online Sharing and Search**

In addition to providing ready-to-use map services like imagery and streets, this spring ArcGIS<sup>SM</sup> Online will enable you to easily [publish your data to the Web to share it with other users](#). ArcGIS 9.3.1 introduces the ability to create layer packages (LPK) from your layers in ArcMap™ and ArcGlobe™ and easily share data with other users. You can upload your layer packages into the new ArcGIS Online Web site, and other users will be able to immediately add them to their own maps and globes.

- **Support for Microsoft® Virtual Earth™**

ArcGIS 9.3.1 supports the *free use* of Microsoft Virtual Earth content in ArcGIS Desktop and a 90-day evaluation for use with ArcGIS Server. You can purchase additional time for using Virtual Earth in your ArcGIS Server implementations.

- **New Capabilities in ArcGIS Data Interoperability**

The ArcGIS [Data Interoperability](#) extension at 9.3.1 uses the latest release of FME® from Safe Software, Inc.

- **ArcGIS API for Microsoft Silverlight™**

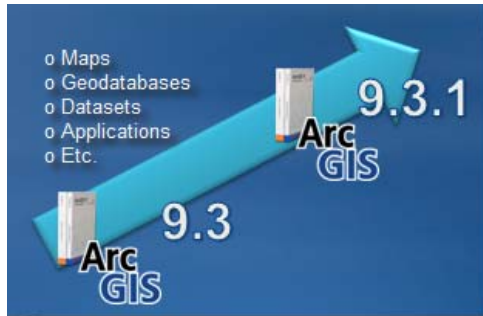
A new Web API for Silverlight will be released this summer that supports building Web map applications for ArcGIS Server. Check on the release status at the [ArcGIS Server Resource Center](#).

- **Extended Support for Java™ Developers**

New and extended [Java capabilities](#) have been added at 9.3.1 that focus on ArcGIS Server for Java.

- **Compatibility with ArcGIS 9.3**

Version 9.3.1 is easy to deploy because all your ArcGIS 9.3 content is supported directly in this new release.



- **Improved WMS Support**

Numerous additions and performance improvements have been made in ArcGIS Server for supporting [Web Map Services \(WMS\)](#).

- **Improvements to the ArcGIS Resource Centers**

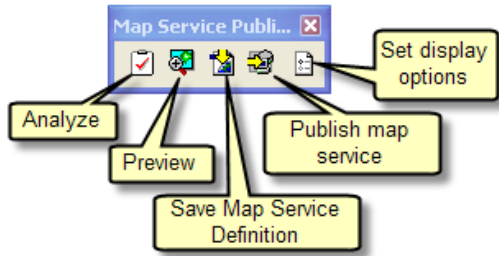
The [ArcGIS Resource Centers](#) continue to grow in popularity. These Web sites help you with your GIS implementations. New content and updates on how to apply ArcGIS are added daily.

## ArcGIS Desktop

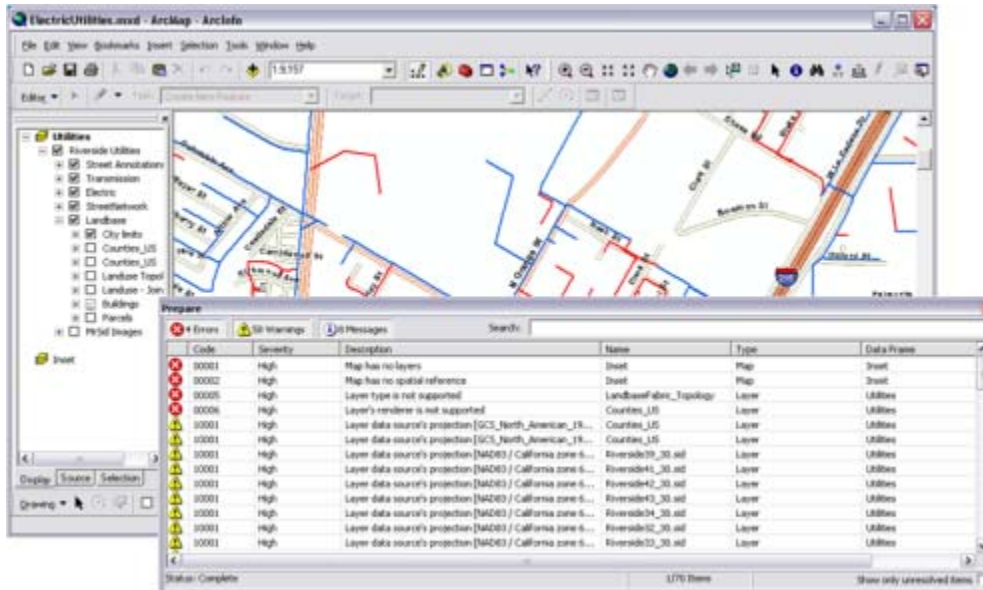
- **Publishing Optimized Map Services**

ArcMap includes a series of tools that enables you to optimize and tune your ArcMap documents for publishing high-performance, scalable map services to ArcGIS Server. Optimized map services are significantly faster and much more scalable than map services published in previous versions of ArcGIS.

The Map Service Publishing toolbar is a new toolbar for ArcMap in ArcGIS 9.3.1. The Map Service Publishing toolbar helps you analyze the drawing performance of your ArcMap documents, preview your map service, and save your ArcMap document as a map service definition file (map\_name.msdx). The map service definition file is used for creating optimized map services in ArcGIS Server.



The New Map Service Publishing Toolbar in ArcMap at 9.3.1



The Analyze tool generates a report that helps you identify and diagnose potential map performance issues.

See [Publishing optimized map services](#) for more information.

### ▪ ArcGIS Online Sharing and Search

In addition to providing ready-to-use map services like imagery and streets, this spring you will be able to publish your data to the Web and share it with other users through [ArcGIS Online](#).

ArcGIS 9.3.1 introduces the ability to create layer packages from your layers in ArcMap and ArcGlobe. A layer package file is a single, ready-to-use file containing a map's layer and its data. Layer packages make it easy to share data with other users. You can upload your layer packages into the new ArcGIS Online Web site, and other users will be able to immediately add them to their own maps and globes.

See [Saving a layer to disk](#) and [Adding a layer package to your map](#) for information.

In ArcMap and ArcGlobe, the previous ArcGIS 9.3 File menu > Add Data from Resource Center data command has been renamed Add Data from ArcGIS

Online in ArcGIS 9.3.1. This command will automatically launch the new ArcGIS Online Web site. This will enable you to add data from ArcGIS Online directly into your current map or globe.

All ESRI's Web-based data has been unified at 9.3.1 as part of ArcGIS Online.

- The commands for signing in to ArcWeb<sup>SM</sup> Services and using ArcWeb Services accounts have been removed.
  - The ArcWeb Services node in ArcCatalog<sup>TM</sup> has also been removed.
  - The Tools menu > Online Services pull-right list in ArcMap, ArcGlobe, and ArcReader<sup>TM</sup> has been removed.
  - The free online services built into the Find dialog box and Find Route dialog box in ArcGIS Desktop, ArcGIS Engine, and ArcReader continue to work.
  - In ArcMap, the Find Route command that was in the Tools menu > Online Services pull-right list has been moved to the StreetMap toolbar. The StreetMap toolbar at 9.3.1 contains both the commands that enable you to perform point-to-point routing and generate driving directions in core ArcMap—one that uses disk-based StreetMap<sup>TM</sup> routing services and one that uses online services.
  - In ArcReader, the Find Route command that was in the Tools menu > Online Services pull-right list has been put directly into the Tools pull-down menu (Tools menu > Find Route).
- **Free Use of Microsoft Virtual Earth**  
Microsoft Virtual Earth offers high-quality, up-to-date online content for global streets and imagery. At ArcGIS 9.3, you can now add Virtual Earth content to any of your ArcGIS Desktop maps and globes.

See [Using Microsoft Virtual Earth in ArcGIS](#) for more information.

- **Eliminate Tool in Geoprocessing**  
Two new optional parameters have been added to the Eliminate tool at 9.3.1:
- An exclusion expression that can be used to identify features that should not be modified
  - A line or polygon feature class whose geometries define areas in the feature class that should not be modified

See the [Eliminate](#) command for more information.

- **Ordinary Least Squares (OLS) Tool in Geoprocessing**

The [Ordinary Least Squares](#) tool, which is found in the Spatial Statistics toolbox, is now available at all license levels of ArcGIS Desktop (ArcView<sup>®</sup>, ArcEditor<sup>™</sup>, and ArcInfo<sup>®</sup>).

- **ArcGIS Data Interoperability Extension**

In ArcGIS 9.3.1, Data Interoperability is based on the latest release of Safe Software, Inc.'s [FME 2009](#). This means that the Data Interoperability extension takes advantage of new developments in FME, such as improved performance and a better FME Workbench experience. Data Interoperability also supports a number of new formats and transformers.

#### New Vector Formats

- ADAC<sup>®</sup> XML Reader
- Adobe<sup>®</sup> PDF 2D Writer
- Autodesk<sup>®</sup> 3DS Writer<sup>™</sup>
- CityGML Writer
- Informix<sup>®</sup> Reader & Writer
- Informix Spatial Reader & Writer
- Microsoft SQL Server<sup>®</sup> Spatial Reader & Writer
- OpenStreetMap<sup>®</sup> Reader
- Wavefront OBJ Reader & Writer

#### New Transformers

- |                              |                          |
|------------------------------|--------------------------|
| ▪ AttributeDereferencer      | ▪ HTTPFetcher            |
| ▪ CenterLineReplacer         | ▪ HTTPFileUploader       |
| ▪ CoordinateSystemRemover    | ▪ HTTPUploader           |
| ▪ CSGBuilder                 | ▪ LatLongToMGRSConverter |
| ▪ CSGEvaluator               | ▪ ListRenamer            |
| ▪ DonutBridgeBuilder         | ▪ MeasureExtractor       |
| ▪ DuplicateCoordinateRemover | ▪ MeasureSetter          |
| ▪ Extruder                   | ▪ MGRSGeometryExtractor  |
| ▪ ESRIReprojector            | ▪ MGRSGeometryReplacer   |
| ▪ FaceReplacer               | ▪ MGRSToLatLongConverter |
| ▪ Generalizer                | ▪ PathBuilder            |
| ▪ GeometryTraitFetcher       | ▪ SecondOrderConformer   |
| ▪ GeometryTraitRemover       | ▪ SpikeRemover           |
| ▪ GeometryTraitSetter        | ▪ Triangulator           |
| ▪ HTTPDeleter                | ▪ WebCharter             |

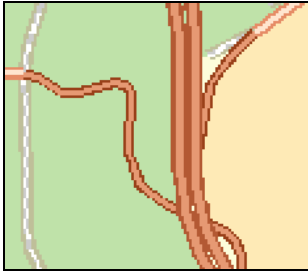
## ArcGIS Server

- **Map Services**

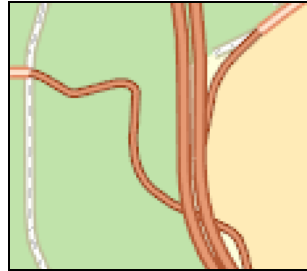
ArcGIS 9.3.1 introduces faster map services for ArcGIS Server. These optimized map services use a new engine for faster drawing performance for dynamic map services and faster cache generation for cached

services. The optimized map service performs better than equivalent ArcIMS<sup>®</sup> and ArcGIS Server services on all supported platforms.

Because of native support for antialiasing, drawing quality is also improved compared with existing ArcIMS and ArcGIS Server services.



*Example of a Map Document (\*.mxd) Service without Antialiasing*



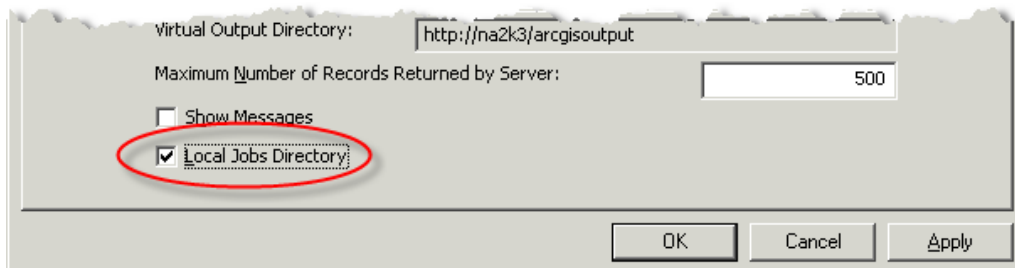
*Example of a New 9.3.1 Optimized Map Service with Antialiasing*

Optimized map services support common vector and raster data sources and 2D symbology. Map documents can be prepared for publishing as optimized map services via the [Map Service Publishing toolbar in ArcMap](#).

See [Publishing a map service](#) for more information.

- **Geoprocessing Services**

In ArcGIS 9.3.1, you can set a geoprocessing service to use the Local Jobs Directory from the geoprocessing service property dialog box. This setting can be important for the performance of geoprocessing services deployed on a distributed server.



See [Managing the jobs directory](#) for more information.

- **Using Microsoft Virtual Earth Layers and Locator**

Microsoft Virtual Earth offers high-quality, up-to-date online content for global streets and imagery. At ArcGIS 9.3.1, you can now add Virtual Earth content to ArcGIS Server Web applications. In addition, you can use the Find Address task to access the Microsoft Virtual Earth locator for finding addresses and place-names. This locator can also perform reverse geocoding.

See [Selecting layers to display](#) for more information.

- **Adding Image Services to Web Mapping Applications**

In ArcGIS Server Manager and the Visual Studio® integrated development environment (IDE), you can now add image services to your Web mapping applications. The process for adding image services to your maps is similar to that of adding map services.

See [Selecting layers to display](#) for more information.

- **Configuring Properties for a Custom Server Object Extension**

For developers who have created a server object extension (SOE), the properties to configure that SOE can now be shown in ArcGIS Server Manager.

- **Improved Support for WMS in ArcGIS Server**

- **WMS performance improvements using optimized map services**—A result of using the new optimized map services at ArcGIS 9.3.1 is that ArcGIS Server can publish high-performance WMS map services. Our tests have shown that these WMS services are faster than any other method currently available for publishing WMS.

- **Support for authenticated WMS services**—In ArcGIS Server Manager and the Microsoft Visual Studio IDE at 9.3.1, you can specify a user name and password when adding an authenticated WMS service to your Web mapping application. Click the Access secured services option to enter the user name and password.

- **Can choose which layers from a WMS service to add to your map**—When adding a WMS service to your Web mapping application, you can now select which layers from the WMS service will be added to your Web map and table of contents (TOC). Previously, the entire service had to be displayed. To choose which layers are added, edit the markup of the mapResourceItem definition in the Default.aspx.

There is a new LayerSubset option. For example:  
`ResourceDefinition=" ; layerSubset=14,7,4"`

## The ArcGIS Server REST API

- **Network Analyst Solve Route Operation**

The ArcGIS Server REST API supports Solve Route operations using ArcGIS Network Analyst route layers. This functionality is available for map services that contain a route layer and had Network Analyst capabilities enabled when the map service was published.

- **ArcGIS Server Version Information**

The current version number of ArcGIS Server is returned as the `currentVersion` property in the catalog response for services and folders. In ArcGIS 9.3.1, the version number will be returned as 9.3.1.

## Using the Web Mapping Application in ArcGIS Server for Microsoft .NET

- **Performance Improvements**

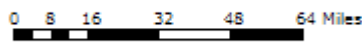
Performance of the Web mapping application was evaluated and improved for the 9.3.1 release. Performance improvements have been made to some of the Web controls, such as the [new scale bar](#), as well as startup time and overall performance of the Web mapping application.

- **New Scale Bar**

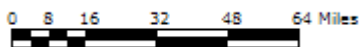
Web mapping applications in ArcGIS 9.3.1 have a new scale bar built on Microsoft .NET technology. This new scale bar is based on the [DHTML scale bar in the ArcGIS Server Resource Center .NET code gallery](#). This new scale bar offers better performance and different styles (Alternating, Double Alternating, Single Division, and Scale Line). The units will automatically convert from miles to feet and kilometers to meters when the scale changes. There will also be an option to set the spelling of the units. For example, you can spell *meters* as “meters” or “metres.”

The new scale bar style options are

- **Alternating**



- **Double Alternating**



- **Single Division**



- **Scale Line**

See [Choosing the look and feel of the application](#) for more information.

- **Updated Look and Feel for MapTips**

The default appearances of MapTip callouts and the Identify results dialog box have been improved in the Web mapping application.

## The Web ADF for Microsoft .NET

- **Customizing Look and Feel of MapTips**

The Web Application Development Framework (ADF™) JavaScript™ Library has been enhanced to provide greater control over customizing the look and feel of MapTips. New examples have been added to the [MapTips sample](#) that demonstrate how to leverage this new capability. In addition, a new MapTips custom control template is also available from the ArcGIS Server Resource Center .NET code gallery that enables drag-and-drop configuration of the new customization endpoints.

- **User Control Task**

A new User Control task has been added to the available Web controls in the Web ADF. This new task is based on the [User Control task sample](#) available in the software developer kit (SDK). In addition, you can configure custom User Control tasks in ArcGIS Server Manager and include them in Web mapping applications.

- **Print Task Templates**

In ArcGIS 9.3.1, a new property called `LayoutTemplateFile` is available that allows you to define the contents of your printed maps. This file, located at `Default=/aspnet_client/ESRI/WebADF/PrintTaskLayoutTemplates/default.htm`, is customizable.

The Print task will generate a map layout based on your template. By default, at 9.3.1, this new map template includes the map title, map, and legend information. Task results and copyright text can also be included in the printed map.

## ArcGIS Server for Java

- **Support for Image Services**

In ArcGIS Server Manager, using the Eclipse™ and NetBeans™ IDE plug-ins, you can now add [image services](#) to your Web mapping applications.

- **Access to Authenticated WMS Services**

In ArcGIS Server Manager, using the Eclipse and Netbeans IDE plug-ins, you can specify a user name and password when adding an authenticated WMS service to your Web mapping application.

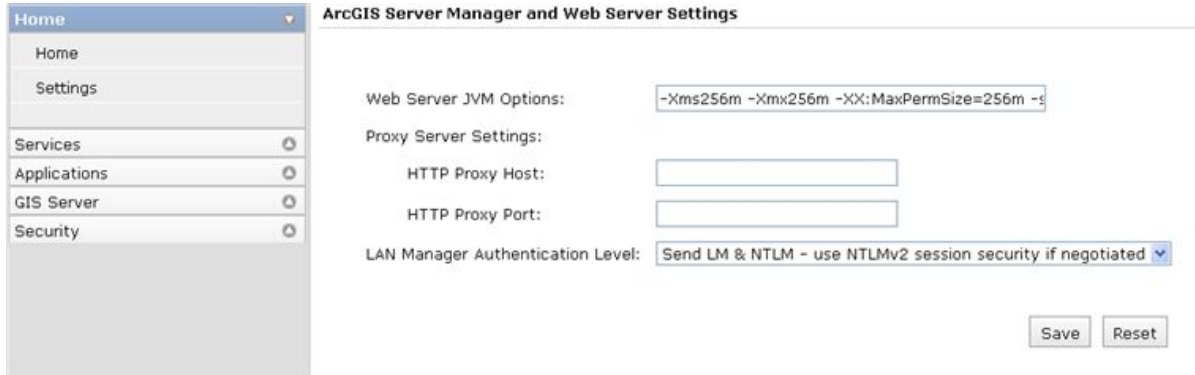
- **Configure Properties for a Server Object Extension**

For developers who have created a server object extension, the properties to configure that SOE can now be shown in ArcGIS Server Manager.

- **Configure Settings for ArcGIS Server Manager and Web Server**

You can now use the Settings panel to configure settings for the internal Web servers that host the Manager and Web applications. For example,

you can specify the proxy server to use for Internet connections or the authentication protocol for local connections. You can also specify JVM parameters, like minimum and maximum heap size, for the internal Web server that hosts the deployed Web applications.



- **New ArcGIS Java Web Services Toolkit**

The Web ADF provides a new ArcGIS Java Web Services Toolkit that has better performance and uses memory more efficiently.

See [Migration document](#) for more information.

- **Editing Task Enhancements**

The Editing task now supports multiple configurations. Each configuration specifies which layers and versions to edit from a map service's workspace and which settings to apply during editing. This removes the need for adding more than one Editing task to a Web application and allows you to pick which configuration to use while editing. The Editing task has also been improved to allow you to pan, zoom, and navigate the map while you are editing features.

- **WMS Enhancements**

The TOC control now reflects scale dependency of WMS layers and provides a convenient Zoom to Layer context menu. You can also define which [layers from the WMS service](#) are added to the map and TOC when adding a WMS service to your Web mapping application. Previously, the entire service had to be displayed. To choose which layers are added, specify the layerSubset property in the WMSMapFunctionality managed-bean declaration:

```

<managed-bean>
  <managed-bean-name>wmsMap</managed-bean-name>
  <managed-bean-class> com.esri.adf.web.wms.data.WMSMapFunctionality</managed-bean-class>
  <managed-bean-scope>none</managed-bean-scope>
  <managed-property>
    <property-name> layerSubset</property-name>
    <list-entries>
      <value>cities</value>
      <value>countries</value>
    </list-entries>
  </managed-property>
</managed-bean>

```

## Building ArcGIS Extensions in Java

Java developers using ArcGIS 9.3.1 can build the following ArcGIS extensions in their native Java environments. These extensions can be deployed and plugged seamlessly into the ArcGIS environment.

- **Server Object Extensions**

Java developers can [extend the MapServer Object type](#) to build customized ArcGIS behavior into the core server itself without having to build this logic into their Java applications at the Web tier.

- **Utility Objects**

Java developers can create [custom utility objects](#) to consolidate the recurring fine-grained ArcObjects™ method calls in an application. Creating custom utility objects heavily reduces the interoperability overhead of fine-grained calls between Java and COM objects, improving performance of your application.

- **Feature Renderers**

Java developers can create [custom feature renderers](#) to control the way each feature in a map layer is drawn. Also, the custom feature renderers that you create can implement persistent behavior and can therefore be saved within a layer (.lyr) file or a map document (.mxd) file.

- **Class Extensions**

Java developers can create [custom class extensions](#) to customize data behavior in a geodatabase.

- **Plug-in Data Sources**

Java developers can create [custom plug-in data sources](#) to integrate and access external data formats with an ArcGIS geodatabase (read-only).

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