



An Overview of ArcWebSM Services

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An Overview of ArcWeb Services

What Are ArcWeb Services?

ArcWebSM Services are ESRI's family of hosted geographic information system (GIS) Web services. Through ESRI[®] ArcWeb Services, users can access and consume many types of geographic content including basemaps, business data, points of interest, and dynamic data such as weather information. ArcWeb Services can also provide geospatial functionality such as routing, mapping, geocoding/reverse geocoding, address matching, and place finding, all on top of leading commercial data sets. That means users have a wide variety of highly scalable functionality and data that they can include in their applications without having to support or maintain that functionality and data. The result is significant savings of development time, expense, and computer resources.

Advantages of ArcWeb Services

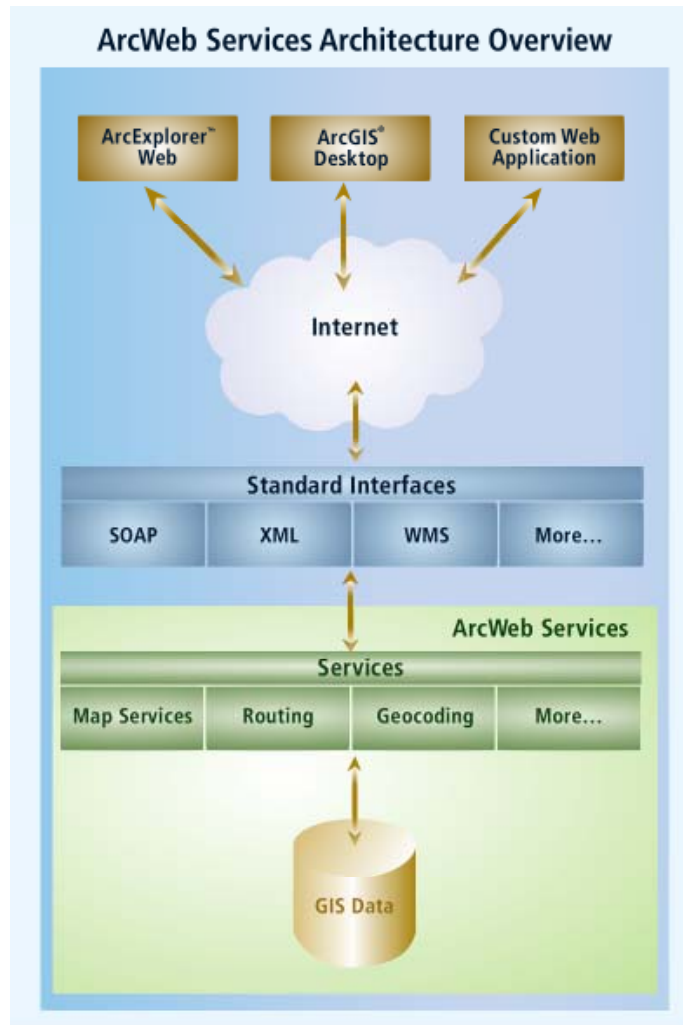
The key advantages of ArcWeb Services include the following:

- Access to vast amounts of current, reliable data and GIS capabilities without having to maintain or store the data
- Ability to combine multiple services and integrate them with your own application environment, leading to limitless possibilities for sharing geographic information
- No need to purchase hardware or software
- No need to obtain updates to data sets because the data accessed via ArcWeb Services is always current
- 24/7 reliability

ArcWeb Services Customers

ArcWeb Services currently deliver approximately 1.5 million transactions each day to many world-class customers including the following:

- Homestore, Inc.
- National Geographic Society
- The Associated Press
- World Wildlife Fund
- National Park Service



ESRI ArcWeb Services Infrastructure

ArcWeb Services are based on an ESRI-hosted infrastructure designed to provide reliable 24/7 services. This infrastructure is powered by a variety of leading-edge technologies. The system hardware is provided by Sun Microsystems and includes numerous server-class machines that run the Web, mapping, and data servers. Two complete configurations are maintained at geographically separate locations to provide full system redundancy and load balancing. This robust, reliable system has the capability of delivering 5,000,000 maps per day at a 99.9 percent availability rate.

The ArcWeb Services system is monitored and maintained by ESRI staff on a 24/7 basis. ESRI staff is on-site during standard business hours (8:00 a.m. to 5:00 p.m., Pacific time) to perform any required system maintenance. ESRI staff is also available by pager during nonbusiness hours if there are system interruptions. If the system hardware, software, network, or applications fail to perform, ESRI systems staff is automatically notified by pager and will address the issue immediately. ESRI has high-level support

agreements with our hardware and network vendors that guarantee prompt response, if necessary.

ESRI Internet Technology

ArcWeb Services combine the power and spatial processing capabilities of ArcIMS®, ArcSDE®, and leading third party technologies with a spatial data repository maintained by ESRI. For further information on these technologies, refer to the product sections of the ESRI Web site at www.esri.com/software.

ArcSDE is an application server that facilitates storing and managing spatial data (raster, vector, and survey) in a database management system (DBMS) and makes the data available to many kinds of applications. ArcSDE is open and works with a variety of different databases including Oracle, Informix, IBM DB2, and Microsoft SQL Server.

ArcIMS is the foundation for distributing spatial data and applications over the Web and wireless Web. It performs basic spatial functions such as geocoding, reverse geocoding, spatial searching, and mapping. ArcIMS is composed of a multitier, highly scalable architecture consisting of Web server connectors, an application server, a spatial processing server, and a suite of open Extensible Markup Language (XML) application program interfaces (APIs) that allow the application developer community to easily and quickly develop compelling location-based applications.

ArcIMS and ArcSDE were developed to work together as an integrated back-office solution for fast Internet or Intranet access to vector, raster, and survey data stored in a relational database. ArcSDE also works as an application server, delivering spatial data to many kinds of applications and serving spatial data across the Web and wireless Web.

Available ArcWeb Services

ArcWeb Services are a robust family of GIS Web services. This family includes services for developers, services for ArcGIS users, and ArcWeb Services solutions.

ArcWeb for Developers

ArcWeb for Developers is deployed through standard Web protocols and languages including hypertext transfer protocol and XML. ArcWeb for Developers uses the XML-based Simple Object Access Protocol (SOAP) to communicate and, therefore, is compatible with the majority of Web services frameworks available today such as Microsoft's .NET or The Mind Electric's Glue. Developers do not have to learn new programming languages or environments to use ArcWeb for Developers, so they can get up and running quickly. The ArcWeb for Developers APIs are fully documented and include tutorials on how to access them using popular development tools.

ArcWeb for Developers is a combination of ArcWeb Services focused on U.S., North American, and European coverage. It includes a rich offering of data content along with several of the most popular services for building custom mapping and locator applications.

The services included in ArcWeb for Developers are made available using SOAP protocols, which can be easily integrated into any Web page or custom-built Web-enabled application. ArcWeb for Developers services include

- Map Image: Generate a dynamic map of a specific location.

- Place Finder: Determine the location of a place (e.g., city, river) anywhere in the world.
- Address Finder: Determine the location of U.S. and European street addresses.
- Route Finder: Generate a route with driving directions for multiple locations.
- Query: Determine the characteristics (e.g., population, flood potential) of a location.
- Point of Interest (POI) Manager: Upload or input custom points of interest for use with services.
- Proximity: Find the nearest points of interest using user-specified parameters.
- Account Info: Access your account information such as usage statistics.
- Utility: Change the projection of your map image.

ArcWeb for Developers Protocols

ArcWeb for Developers uses the latest Web service standards to communicate with local applications. It uses a set of methods, or function calls, that can be invoked remotely from a client machine to get the desired results. This seamless interchange requires that ArcWeb for Developers communicates in a way that is understood by any remote application. This standardized communication is accomplished through two Internet protocols, SOAP and Web Service Definition Language (WSDL).

In addition, ArcWeb for Developers is compatible with Web service toolkits, such as Visual Studio .NET (which supports Visual Basic and C#) and The Mind Electric's Glue or ColdFusion MX (which support Java) making integration into existing applications easy. The ArcWeb Services contained in ArcWeb for Developers are published to a Universal Description, Discovery, and Integration (UDDI) registry so developers can quickly discover them.

ArcWeb Services for ArcGIS Users

[ArcWeb Services for ArcGIS Users](#) are map services, service packages, and tools that can be used individually or in combination with others in your ArcGIS Desktop. These services and tools allow ArcGIS users easy access to the functionality of Web services while maintaining the features of ArcGIS Desktop including the display and query of maps, creation of publication-quality hard copies, development of custom map applications, and performance of many other map-based tasks.

The ArcWeb Toolbar and ArcWeb Services Packages allow ArcGIS Desktop users to directly consume data and functionality offered by ArcWeb Services. The toolbar provides access to a sampler of free data as well as ArcWeb USA, a package of high-quality data for the United States. ESRI will also soon be releasing packages for Europe and specific countries throughout the world.

The ArcWeb Toolbar and ArcWeb Services Packages offer access to the following functionality:

- Display content-rich maps.
- Find named places and display them on a map.

- Find addresses and display them on a map.
- Find a route between two or more stops, display it on a map, and get driving directions.
- Locate points of interest using different proximity parameters.
- Query to determine information for a specified location.

ArcWeb USA—Lets you use the functionality of the ArcWeb toolbar with data sources such as Geographic Data Technology, Inc. (GDT), or Tele Atlas basemaps; GlobeExplorer digital orthophoto quarter quadrangle (DOQQ) imagery; Meteorlogix weather data; National Geographic topographic maps; United States Geological Survey (USGS) land cover and elevation data; and more.

ArcWeb Services for ArcGIS Users also include individual ArcWeb Services from many of the world's leading commercial data publishers. These ArcWeb Services incorporate the ArcXML protocol for easy integration with ArcGIS and can be accessed as either an image or feature service. You can use these ArcWeb Services as background layers for other local data, and you can interact with the data in much the same way as you would with a local source on the desktop.

GDT U.S. Streets—Based on the GDT premier street network database, Dynamap/2000. The Dynamap/2000 database contains more than 13 million addressed street segments along with administrative boundaries, highways, railroads, landmarks, water bodies, and more. Subscription access is available at a national and state level as a feature service or as an image service.

GDT Canadian Streets—Provides a detailed street basemap for Canada. It includes the entire Canadian road fabric containing more than 635,000 addressed streets. The service includes extensive, detailed, and current street information that can be used to plan, analyze, and display strategic initiatives. Subscription access is available at a national and provincial level as a feature service or as an image service.

Tele Atlas U.S. Transportation and Basemap—Based on the Tele Atlas U.S. ArcIMS Route Service. This service provides the foundation for excellent vehicular fleet navigation, logistics, deployment, tracking, and dispatch applications. Subscription access is available at a national and state level as a feature service or as an image service.

Pixxures WebPix USGS DOQQ Mosaic—Based on the USGS DOQQ orthorectified aerial photography library. This service provides a seamless mosaic backdrop. It is designed for use as a reference layer for vector extraction and alignment, land use analysis, detailed access and vegetation analysis, emergency response planning, and tactical implementation.

ORBIMAGE OrbView Cities—Covers select cities around the world at 1-m resolution.

WorldSat Global Imagery—Provides WorldSat's 1-km or 2-km pixel resolution, cloud-free images of the world. The imagery was collected and processed from the National Oceanic and Atmospheric Administration (NOAA) series of Advanced Very High Resolution Radiometer (AVHRR) weather satellites, which orbit the earth at an altitude

of more than 820 km (520 miles) in space. These data sets are available coregistered to digital elevation data with shaded relief as well as ocean bathymetry based on NOAA's E-TOPO 5 data. The services also include general reference layers, country boundaries, and city points from ESRI.

Meteorlogix Real-Time Weather Services for Cloud Cover—Offers ground-corrected altitude-based remapped satellite cloud cover data updated every 60 minutes. Clouds are delivered at 4-km resolution for smaller view areas up to a scale of 1:16,000,000 and at 16-km resolution for larger view areas with scales beyond 1:16,000,000. Subscription access is available at a national and state level as a feature service or as an image service.

Meteorlogix Real-Time Weather Services for Surface Observations—Provides past one- and 24-hour weather reports taken at station observation locations across North America. Real-time cloud height information is updated on a 60-minute cycle and provided as a direct feed to the GIS desktop. Subscription access is available at a national and state level as a feature service or as an image service.

NEXRAD: Meteorlogix Real-Time Weather Services for Precipitation Intensity—Provides real-time NEXRAD base reflectivity data updated on a 15-minute cycle and provided as a direct feed to enable monitoring and analysis of precipitation intensity (rain, mix, snow) across the United States. Subscription access is available at a national and state level as a feature service or as an image service.

Meteorlogix Real-Time Weather Services for Rainfall—Provides the past one-hour and 24-hour rainfall estimates from NEXRAD digital precipitation array. The measurement units are in inches of water. Rainfall estimates are delivered at 4-km resolution for smaller view areas up to a scale of 1:16,000,000 and at 16-km resolution for larger view areas with scales beyond 1:16,000,000. Subscription access is available at a national and state level as a feature service or as an image service.

Meteorlogix Real-Time Weather Services—Offers a complete weather package incorporating cloud cover, NEXRAD base reflectivity and precipitation type (rain, mix, snow), and surface observations. The weather information is updated on a continuous basis, from every 15 minutes to every hour.

ArcWeb Solutions

For the end user who wants rapid and easy access to maps and geographic-based reports, ESRI offers solutions that have been built using ArcWeb Services. These solutions provide up-to-date geographic-based reports and maps that end users can access through a subscription service or download.

ArcWeb Services solutions now offered by ESRI include

- **ESRI Business Information Solutions (ESRI BIS)**—Provides industry-specific marketing applications and services such as demographic data reports and maps, customer profiling, site evaluation and selection, target marketing, and much more.
- **Flood Map Report**—Allows users to download a flood map report to help determine the relative flood risk of a specific location. These reports are created using Federal

Emergency Management Agency (FEMA) Q3 Flood Data and GDT Dynamap/2000 street data.

- MapShop for Media—Allows journalists to obtain maps in formats that can be edited in typical illustration software.
- MapShop for Homeland Security—Provides emergency and crisis management centers with the ability to create a common operating picture and access detailed data for a specific event.

For more information on ESRI's ArcWeb Services, visit www.esri.com/arcwebservices.