

# Image Web Server Datasheet

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Feature	Feature Description
<b>Image serving protocols</b>	
Multi-protocol support	Expose images with different protocols.
ECWP image streaming protocol	Client-side decompression of image data (via ActiveX control). This provides: <ul style="list-style-type: none"><li>Asynchronous panning / zooming of imagery.</li><li>Intelligent client side caching and image decompression.</li></ul>
OGC™ WMS 1.1.1	<ul style="list-style-type: none"><li>XML based requests.</li><li>On-the-fly image reprojection.</li><li>Configure multiple-WMS services on the same Image Web Server.</li><li>Name and group WMS layers.</li><li>Custom tags for WMS services.</li><li>Complete control over services with per service XML configuration files.</li><li>Combine multiple layer requests for image services in a single request.</li><li>Supports multiple SRS for each layer using reprojection on the fly.</li><li>Supports a default WMS service that is configurable from the management console.</li><li>Fully OGC WMS v 1.1.1 compliant.</li><li>Scale dependent images from WMS services</li></ul>
ESRI™ ArcXML protocol	Image Web Server can imitate an ArcIMS server - sending / receiving information via the ArcXML protocol. <ul style="list-style-type: none"><li>On-the-fly image reprojection.</li><li>Grouping of layers</li></ul>
Simple HTTP protocol (ImageX)	A simple HTTP protocol for efficiently generating image thumbnails and image extractions from the image mosaic files.
Web 2.0	Segments the image view into square JPEG tiles which are combined in an HTML web viewer.
KML (Google)	By using a WMS reflector script, Image Web Server image data can be brought in to Google Earth™ viewers.

## File format Support

Read and serve ECW and JPEG 2000 wavelet-based compressed data formats.	These highly efficient file formats are read from disc – no database is involved. This provides a massive performance boost.
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Write JPEG / PNG / JPEG 2000 (Image Extraction Engine has a greater range of output options) Create small subsets of image mosaics.

### Datums / projections

EPSG text descriptions Choose coordinate systems based on common EPSG text descriptions instead of datum/projection pairs.

Comprehensive projection support Over 3200 predefined coordinate systems.  
Over 1100 datum shifts.  
50+ mathematical projections, local and global vertical datums.

### Security

SSL communication Image data is encrypted (encryption strength based on browser capabilities).

Basic NTFS file security Images are secured on the server and user / group access is controlled by username / password (built on OS security).

Database driven security Users and their permissions are stored in a database that Image Web Server can access.

IP address based security Filter user permissions based on originating IP address.

Image resolution / region security Limit the resolution an image can be viewed at (ground scale).  
Deny access to particular regions of an image e.g. security zone.

### Performance

Support massive imagery Deliver terabytes of image data with a single server.

Low memory usage

High-performance Scale effectively to handle hundreds of users simultaneously accessing multiple image files in multiple protocols.

Streaming protocol:

- Image Web Server should scale efficiently in the streaming protocol to support up to 100 concurrent images per second on a modern dual processor system operating under Windows 2003 Server.

WMS / ArcXML protocols:

- The Image Server should support up to 10 concurrent JPEG image requests per second on a modern dual processor system operating under Windows 2003 Server. The server should be capable of generating a JPEG image in under 1 second from receipt of order.

Load balancing Image Web Server works with Microsoft Network Load Balancing efficiently.

Support for "Web Gardens" under IIS 6.0

Narrow to broad band availability	Capable of serving images on slower lines including dial-up and DSL types of connections as well as high speed Intranet and Internet connections.
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**GIS integration**

Desktop applications	High degree of compatibility with geospatial workstations such as ArcGIS™, ArcView™, MapInfo™, AutoCAD™, ERDAS™, PCI™, ER Mapper™, MS Office™, Small World™, MicroStation™ etc.
High performance image streaming for major GIS workstations	<p>Plug-ins are available for the following industry workstations to enable efficient streaming image access with client-side caching:</p> <ul style="list-style-type: none"> <li>• ESRI™ – ArcGIS 8x and 9x.</li> <li>• ESRI™ - ArcView</li> <li>• MapInfo™ Pro</li> <li>• AutoCad™</li> <li>• Microstation™</li> </ul>
ArcIMS compatibility	
GIS server integration	The client component is compatible with industry GIS servers to display multiple vector maps over raster imagery.
Multiple GIS servers in the same web application	The Web Client software can simultaneously integrate the data from different GIS servers like MapExtreme™, ArcIMS™, ArcServer™, Map Guide™, and OGC™ WMS. Integration is asynchronous (data integrated and displayed as received by viewer).
Google Earth™	

**Data loading**

Fast and efficient data loading	The administrator only needs to copy an image file into a designated folder on the Image Web Server disk, network drive or SAN.
No database required	Does not require pyramids be built in an RDBMS.

**Virtual Images**

Algorithm support	IWS can publish algorithms created in ER Mapper Pro as "virtual images". You can have different versions of the same image without having to duplicate the image data.
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**Image viewing**

Dynamic roam and zoom	Fast and interactive experience for the user.
Native streaming support in many applications	Many GIS / CAD applications offer ECWP readability natively.
Free browser plug-ins	ActiveX or Java plug-in for ECWP protocol.
Free application plug-ins	Plug-ins for common applications so that users can take advantage of ECWP streaming

Multi-layer image / GIS viewing The client component (ActiveX / Java) supports a layered view display with an asynchronous independent update of each image layer. The viewing control is fully scriptable from JavaScript providing functions to:

- Set transparency on any image layer using a transparency slider.
- Set visibility on any layer.
- Set clipping on image layers to restrict an image view to a defined area.
- Promote/demote the image order in the viewing "stack".
- Select bands from multi-band imagery.
- Provide a means of measuring progressive image loading progress.
- Display imagery from industry standard projections with ability to derive geodetic coordinates from a point.
- Overlay the raster images with maps from GIS servers in a separate image plane.
- Set transparency on any colour in an image plane.
- Support standard image pan, zoom and zoombox tools.
- Support basic red lining capabilities for circle, rectangle and irregular polygons.
- Support printing of a blended view from the viewing component.
- Support viewing of images side by side (ie. geolinked) with automatic extents tracking between each view.

Web 2.0 control requires the use of server-side component to make GIS requests / knock-out colors on returned image for transparency.

NULL cell handling for JPEG 2000 images in all Protocols

Exact delineation between null areas and images (no artefacts on the edges).

Image meta-data

The activeX control can extract the following information from the image mosaic header:

- Image filename
- Cell size X
- Cell size Y
- Cell units
- Datum
- Projection
- Image size X
- Image size Y
- Number of bands
- Top left X
- Top left Y
- Bottom right X
- Bottom right Y

**Quality assurance**

Comprehensive quality assurance tools needed

A comprehensive suite of quality assurance tools should be supplied to enable data custodians and administrators to check the integrity of image mosaics loaded to the system. These will include:

- Image checking program which can be run as a web service against an image file to fully check all data elements in the file and report any error conditions.
- Web tools to extract all the header items that are stored in the image mosaic for visual and software validation. These items should include:
  - X cell size
  - Y cell size
  - Cell units
  - Image width (pixels)
  - Image height (pixels)
  - Number of bands
  - Bounding box
  - File name
  - Datum
  - Projection

**Administration**

Powerful, flexible user administration / console

Define protocols / access levels on images / directories, etc.

Remote administration

Administer the server from anywhere in the world.

View images within administration / console