Introduction to the ArcGIS Image Server

Dale Loberger

Jason Lewis

ESRI Charlotte, NC

Executive Summary

- Expanding use of geospatial imagery as the foundation of most maps
- ArcGIS Image Server provides immediate value by
  - giving users fast access to imagery
    - Sensor-to-Server
    - Server-to-Screen
  - reducing storage and pre-processing requirements for imagery
  - simplifying existing workflows

Typical Customer Profile

- Maintains a large volume of imagery
- Frequently receive new imagery
- Imagery contains more than three bands
- Multiple client applications that need to access imagery

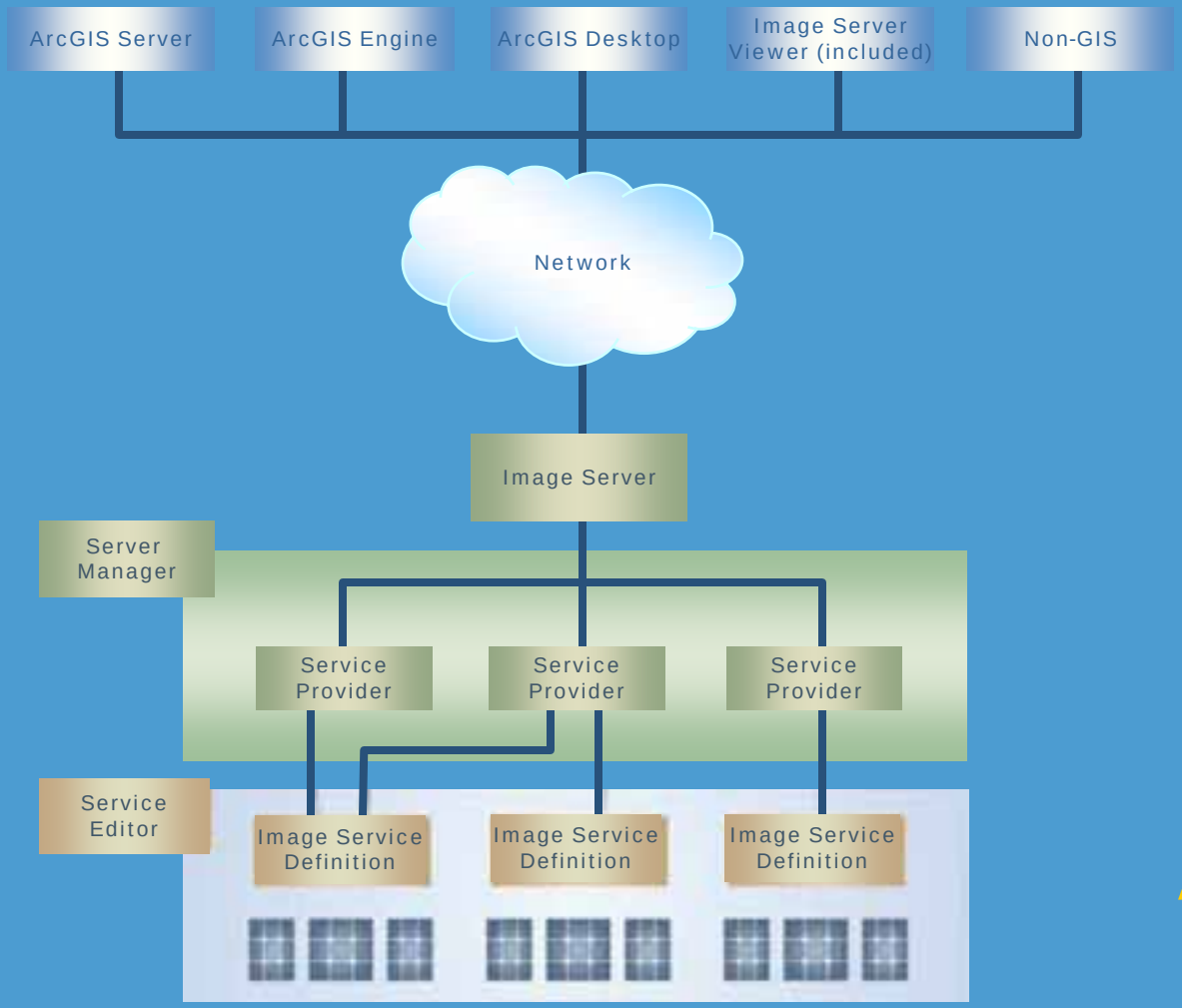
If one or more of these points is true for your organization – you should consider the implementation of ArcGIS Image Server

The Business Solution

- Traditional image management separates *processing* tasks from *distribution* methods
- ArcGIS Image Server integrates them by
  - eliminating data duplication
  - reducing processing time
  - providing multiple representations of base data
  - reducing sub-sampling
  - providing user access to metadata
  - enabling use of low bandwidth networks

Client Access Demonstration

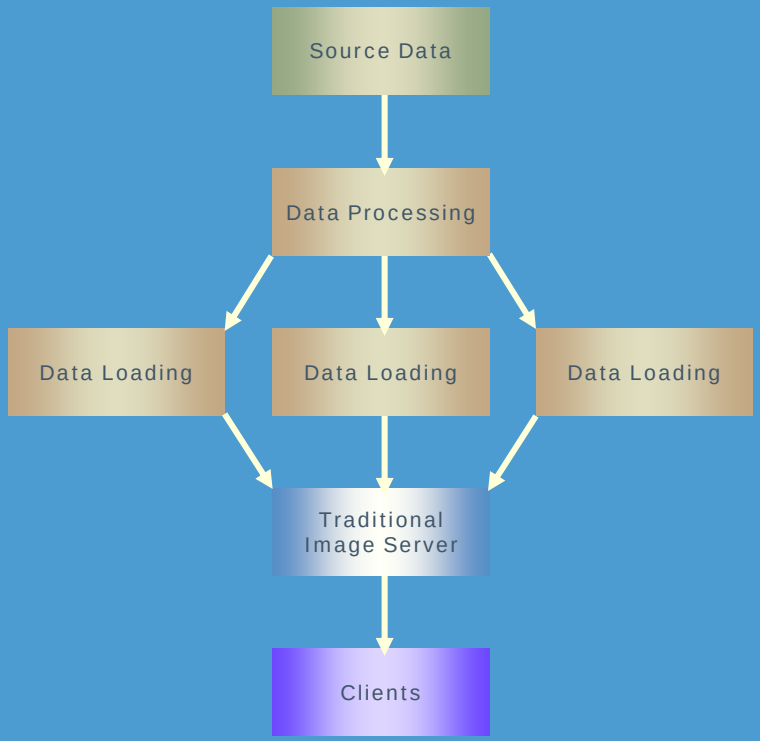
The Technical Solution



Value of ArcGIS Image Server

- Fast access to geospatial imagery
- On-the-fly image processing
- Data and client interoperability
- Full scalability

Access to Geospatial Imagery



Existing Workflow

Access to Geospatial Imagery

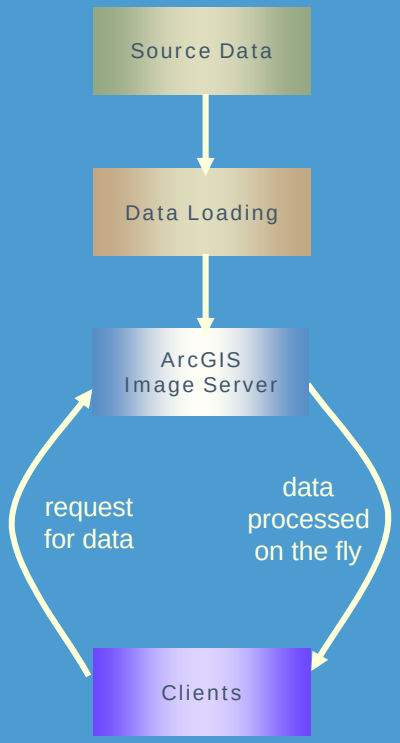


Image Server Workflow

On-the-fly Image Processing

- Working with Elevation
  - Visualize elevation
- Enhancing Appearance
  - Stretching
  - Pan-sharpen
  - Convolution filter
  - Trend
- Band organization
  - Extract bands
  - Stack bands
- Pixel/Band algebra
  - Classify pixel
  - Image algebra
  - NDVI
- Changing output color
  - Colormap
  - Grayscale
  - Spectral matrix
  - Trend
- Geometric processing
  - Ground-to-image
  - Affine, projective, warp
  - Orthorectific (optional)
- Mosaicking methods
  - By attribute
  - Closest to nadir
  - By viewpoint
  - Seamline (optional)

Data and Client Interoperability

- Direct access to multiple formats and compression

Formats	Processing Stage
• TIFF • NITF • PNG • JPEG • DTED • RAW (BIL, BIP, BSQ) • Binary FLT, DEM, or MrSID	• Primary rasters • Scanned aerial imagery • Digital camera frames • Preprocessed imagery (e.g. QuickBird Standard) • Processed tiled imagery (e.g. DOQQ, CIB)

- Compression for *storage* is independent from compression for *transmission*
  - Clients can control compression to balance performance with image quality
  - Client applications can export processed imagery from a service to a local file in TIFF, JPEG, JP2000, and PNG

Data and Client Interoperability

- Direct connections via remote procedure calls (RPC) using included interfaces
  - ArcGIS Desktop (including ArcMap and ArcGlobe)
  - ArcGIS Server
  - ArcIMS
  - Autodesk AutoCAD
  - Bentley MicroStation
  - Image Server Viewer (free viewer application included)
- Web services created through ArcGIS Server add
  - ArcGIS Explorer
  - Google Earth
  - OGC WMS
  - SOAP

Server Authoring Demonstration

Thank you!

Questions?

Dale Loberger - dloberger@esri.com

Jason Lewis – jlewis@esri.com