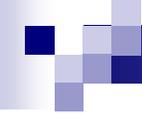


Technology Update From Colorado

**OSM-Western Regional Technical
Team Workshop:
Emerging Technologies in Surface
Mining Regulation and Reclamation
May 23 - 25**



Major Changes

- Regulatory Permit System Re-Write – in progress
- AML (Brasscap) System re-write – August 2006
- GIS
- Imaging System Migration – In progress
- Active Directory - 2007
- New Name – August 2006

Out with the Old, In with the New

- Current Permit System

- Visual Basic 6.0
- SQL 7.0

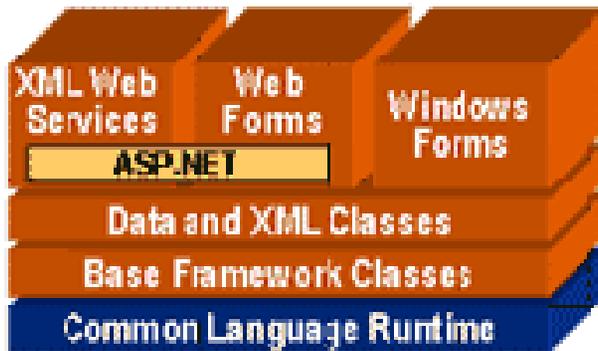


- New System

- .NET Framework
 - Visual Basic .NET
- SQL 2005



Why .NET



Language Independent

- Compiles to a Common Language Runtime
- **Support standard networking protocols**
 - TCP/IP, SOAP, XML, & HTTP
- **Object Oriented**

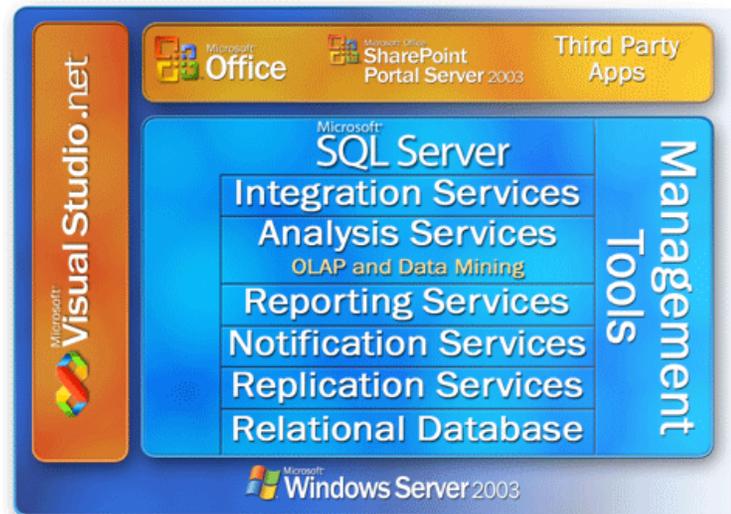
Why Object Oriented Programming

- Object Oriented
 - Methods and Data acting together as a object
 - Flexibility
 - Maintainability
 - Reusability



SQL Server 2005

- Relational Database
- **Replication Services**
 - **Data replication for distributed or mobile data processing**
- Development Tools
 - Better integration with .NET framework



SQL 2005 “Got ya”

- No direct migration from SQL 7.0
- SQL log-in needed to be recreated
- Rebuild security
- Lose primary keys and identity fields and indexes
 - Work around create table first then import data

Permit System Prototype



AML (Brasscap) Rewrite

- Using all the same tool as the Permit System
- Adding a Mobile computing component
 - Using the SQL 2005 replication functionality
- Adding a GPS data collection component
- Automation of the Mine Site Field Form



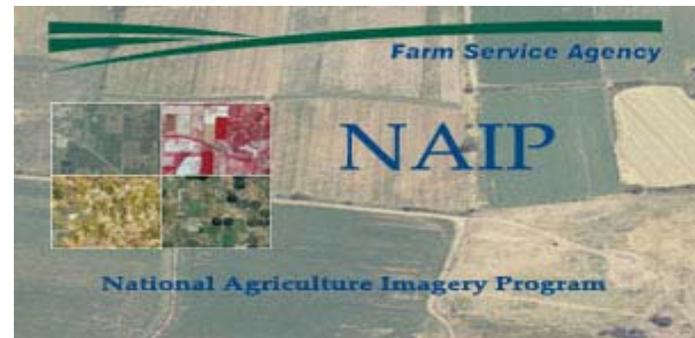
GIS



- Centralized GIS Data on NAS (Network Attached Storage)
 - 998 GB of Storage
- Base Data on NAS
 - County data (county, roads, streams, cities)
 - Coal Permit Data
 - Historical GIS data
 - Somerset / Grand Mesa
 - Colorado Springs

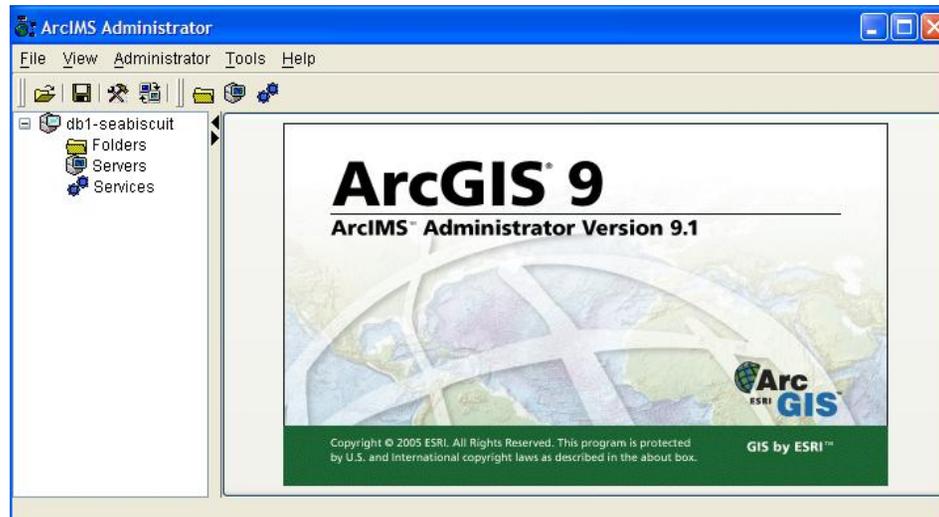
Other Available GIS data

- NAIP Imagery
 - National Agriculture Imagery Program
 - A one meter ground sample distance (GSD)
- Historic Coal Mines
 - Non-geo-referenced Tiffs

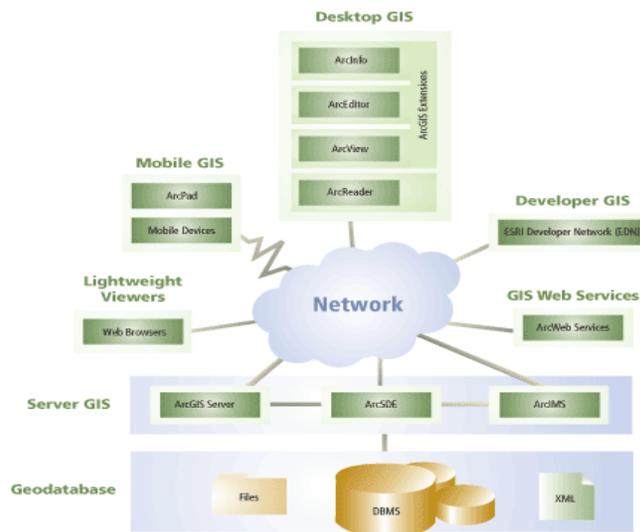


Developing ArcIMS site

- Learning ArcIMS through TIPS On-line Course
- Using IIS and ServletExec
- Production site - ArcIMS and ArcSDE on Department Server



GIS at Colorado Department of Natural Resources



- DNR will host a node for the National Map
- Using ArcSDE against SQL 2000 cluster
- Windows Server 2003
- EMC Centera CX3 SAN

Imaging

- Migrating off IBM's Content Manager
- Laserfiche
 - Using SQL data store
 - Web enabled
 - Can be integrated with ArcIMS
 - Automatic OCR

Laserfiche®

Nature Net - Active Directory

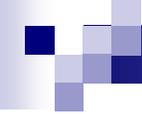
- Currently we are using a NT 4.0 domain
- Department is moving towards network integration
- Migrating to Active Directory



Nature Net



- Consolidated Email
- Centralized Data Storage on SAN (Centera)
- Ability to share resources across Divisions



Name that Division

Colorado Division of Minerals and Geology
becomes

**Colorado Division of
Reclamation, Mining and Safety**

Thanks from Colorado

