Introduction to ArcSDE 8

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Why are you here?

- Introduction to ArcSDE?
- What is a GeoDatabase?
- Existing SDE user?
- Existing ArcInfo user?
- Technical details on implementation?
- Just confused...
ArcSDE 8

- **Do you want ArcSDE 8 (and why)?**
  - **Answer:**
    - to store all your geographic and attribute data in a DBMS
    - provide open data access to all your geographic data sources
What is ArcSDE?

- A new way to store, manage and access spatial data
- A server application that’s works in cooperation with a DBMS
Data Management

- All Data Stored in the DBMS
- DBMS Management of Spatial Data
  - Replication, Backup, Distribution, etc.

GIS  
CAD  
Raster  
Image  
Annotation  

DBMS

Open  
Proprietary

ESRI  Nineteenth Annual User Conference
ArcSDE Architecture

- Open API
- Many Fast Spatial Tools
Benefits of ArcSDE 8

- Spatial data inside DBMS
- Very large databases (scaleable)
- Continuous (seamless) data
- Multiple user environment
- Client / Server technology
- Open API
ArcSDE Server Connectivity

- **Spatial Clients**
- **Non-Spatial Clients**
- **DBMS**
- **SDE**
- **WAN / LAN**

Connections:
- Spatial Clients to API
- SDE to Non-Spatial Clients
- SDE to DBMS
- DBMS to WAN / LAN

**DBMS**

**SDE**

**WAN / LAN**

**API**
ArcSDE Client Connectivity

ArcSDE

ARC/INFO

ArcView

MapObjects

ArcExplorer

OpenGIS/C-API

AutoCAD/MicroStation

DBMS Server

ArcSDE API

ARC/INFO API

ArcView API

MapObjects API

ArcExplorer API

OpenGIS/C-API API

AutoCAD/MicroStation API
ESRI’s Strategy for ArcSDE

- Hardware and DBMS independence
- Open published API’s and data format
- Active promotion of standards (OGC / ISO SQL3)
Tough Question #1

SDE 3.0?
ArcSDE 8?
SDE for Coverages?
What is/was SDE vs. ArcSDE?

- **1998**
  - SDE 3.0: Spatial Database Engine for RDBMS
  - SDE for Coverages
  - ArcSDE = SDE 3.0 + SDE for Coverages

Marketing Box =

SDE 3  SDE for Coverages
ArcSDE 8 Drivers

- 1999

ArcSDE 8

Oracle
SQL Server
Informix
DB2
Sybase
Personal

DBMS

Coverages

Files

rw - multi-user
rw - single-user
ro - multi-user

Your choice
Choose Your DBMS

- **SDE 3.0**
  - Oracle 7.x, 8.x, 8i
  - SQL Server 6.5, 7.0
  - Informix Dynamic Server
  - DB2 Universal Database
  - Sybase
  - Coverages

- **ArcSDE 8**
  - Oracle 8.x, 8i
  - SQL Server 7.0
  - Informix Dynamic Server
  - DB2 Universal Database
  - Sybase
  - Coverages
  - Personal ArcSDE
Product Boxes

• 1999

ArcSDE 8

Oracle
SQL Server
Informix
DB2
Sybase

Personal

DBMS

Coverages

Files

ArcInfo 8 Box
ArcSDE 8 Box
ArcIMS Box

Your choice
Product Packaging / Marketing

• **ArcInfo 8 Box**
  - **ArcSDE Personal**
    • single user
  - **ArcSDE for Coverages**
    • multi-user
    • free server / free connections
  - **ArcSDE for an DBMS**
    • multi-user
    • optional license (server/connections)
Product Packaging / Marketing

- **ArcSDE for an DBMS Box**
  - multi-user server / connections
    - ArcInfo 8 Box *(12 months)*
      - ArcSDE for Coverages
        - multi-user
        - free server / free connections
      - ArcSDE Personal
        - single user
Software Licensing/Prices

- **ArcSDE Servers:** 5 connections included
  - ArcSDE - Standalone: ______
  - ArcSDE as an Extension to ArcInfo: ______

- **Additional Connections**
  - Read Only Connections: 1/2 price of r/w
  - Read-Write Connections: ______
  - **ArcInfo 8 licenses include a full-use connection to ArcSDE!**
Tough Question #2

Simple features?
Custom features?
Object thingies?
Geodatabase?
ArcSDE?
Data (Things) in ArcSDE

- **SDE 3.0**
  - tables
  - tables with geometry which are layers
  - features
  - [simple features]

- **ArcSDE 8.0**
  - tables
  - tables with geometry which are layers
  - features
  - [simple features]
More Data (Things) in ArcSDE

- If you have ArcInfo
  - ArcCatalog
  - ArcMap
  - ArcToolBox

Must have COM
to create and access
these “things”

- Versions
- Rasters
- Locators (geocoding)
- Relationships
- Behaviors
- “Object Thingies”
- [custom features]
ArcSDE 8 and the Geodatabase

• What is a Geodatabase?
• Definition #1: generalized
  - Any instance of geographic data in an DBMS
  - Therefore, ArcSDE is the server technology that is used to create and manage a Geodatabase.
What is a Geodatabase?

Definition #2: programmers
- The data that is stored in ArcSDE with an DBMS and that can contain advanced behaviors, relationships, etc.
- Data in ArcSDE that has object ids.
- Data that contains an object relational data model.
## ArcSDE 8 and the Geodatabase

<table>
<thead>
<tr>
<th>Model</th>
<th>Geo - Relational</th>
<th>Object - Relational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Container</td>
<td>Workspace / Coverages</td>
<td>Geodatabase</td>
</tr>
<tr>
<td>Data Engine</td>
<td>File System</td>
<td>ArcSDE / RDBMS</td>
</tr>
</tbody>
</table>
Tough Question #3

Simple features vs. Custom features?
SDE 3.0

- [Simple Features]
  - read/write from ArcInfo 7.x, ArcView 3.x, MapObjects, etc.
  - read/only for ArcInfo 8
    - for r/w upgrade to ArcSde 8.
ArcSDE 8

- **[Simple Features]**
  - read/write from ArcInfo 7.x, ArcView 3.2, CAD Client, MapObjects, etc.
  - read/only from ArcMap

- **[Custom Features]**
  - read/write from ArcInfo 8, COM technologies
  - read/only for non ArcInfo 8, COM technologies (ArcView,...)
    - read/only of simple feature representation
    - “client not smart enough”
Tough Question #4

Personal ArcSDE or Personal Geodatabase?
Personal ArcSDE

- Built on top of Microsoft Jet
- Single-user ArcSDE included with ArcInfo 8.
- Supports [simple features] and [custom features - geodatabase]
- Name: Personal ArcSDE / Geodatabase?
Tough Question #5

How should I get started with ArcSDE?
Take ArcSDE 8 for a test drive

- Existing GIS User (ArcInfo, ArcView…)
- Try ArcSDE for Coverages
  - part of ArcInfo (free)
  - explore the client / server API and how the clients work with the ArcSDE server technology.
- Try ArcSDE for an DBMS
  - bigger, more functionality, DBMS required
Take ArcSDE 8 for a test drive

- Try the new ArcInfo clients
  - ArcMap, ArcCatalog, ArcToolBox
  - Try these with ArcSDE simple features
- Try a Geodatabase
  - Make your simple features more intelligent using ArcInfo 8.
    - Personal ArcSDE (personal geodatabase)
    - “Enterprise” ArcSDE
Any more Tough Questions?

Or is everything crystal clear?