



Managing your Distributed Data

John Thieling

Jim Gough

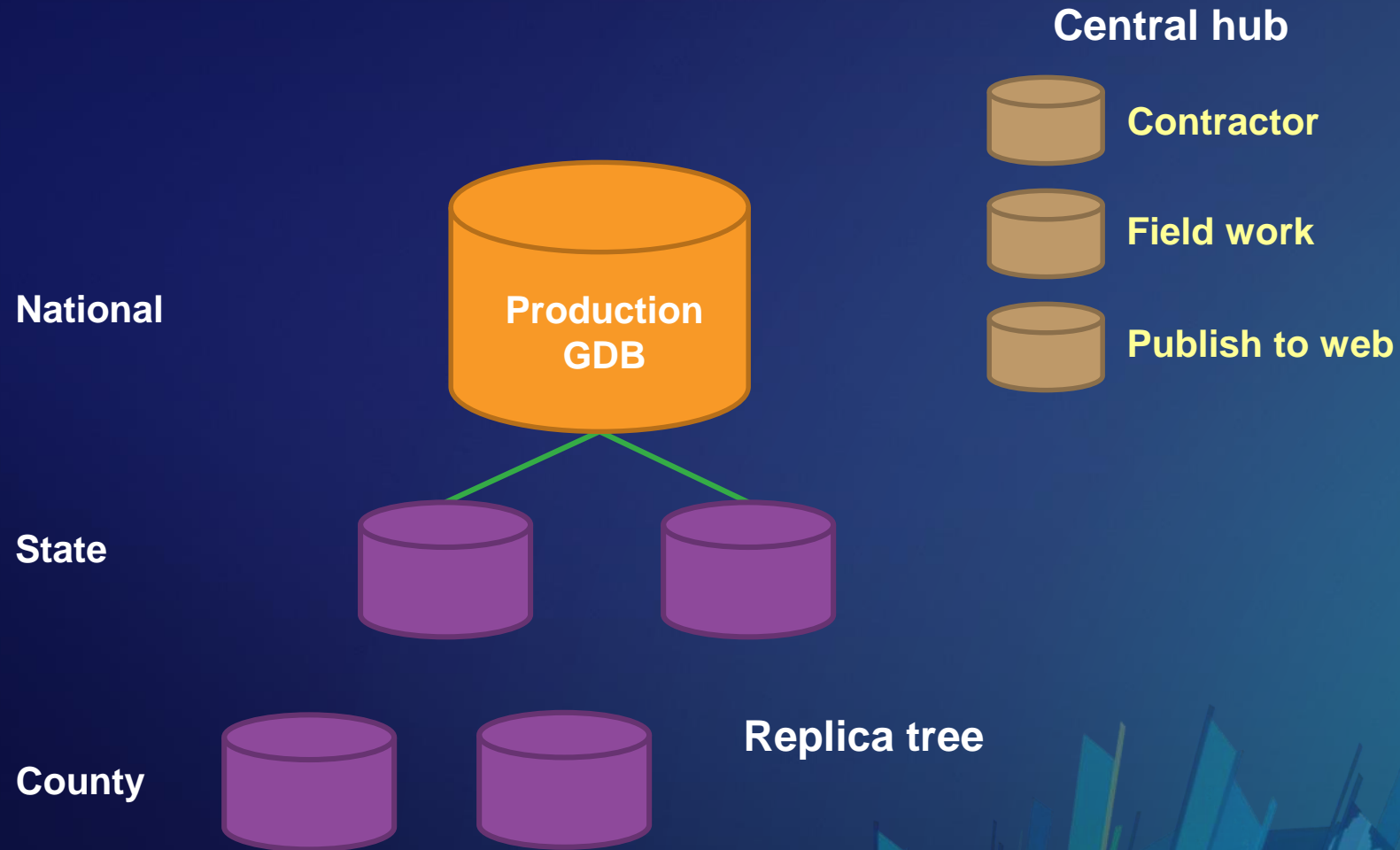
ESRI USER CONFERENCE

GIS
INSPIRING
WHAT'S
NEXT

Overview



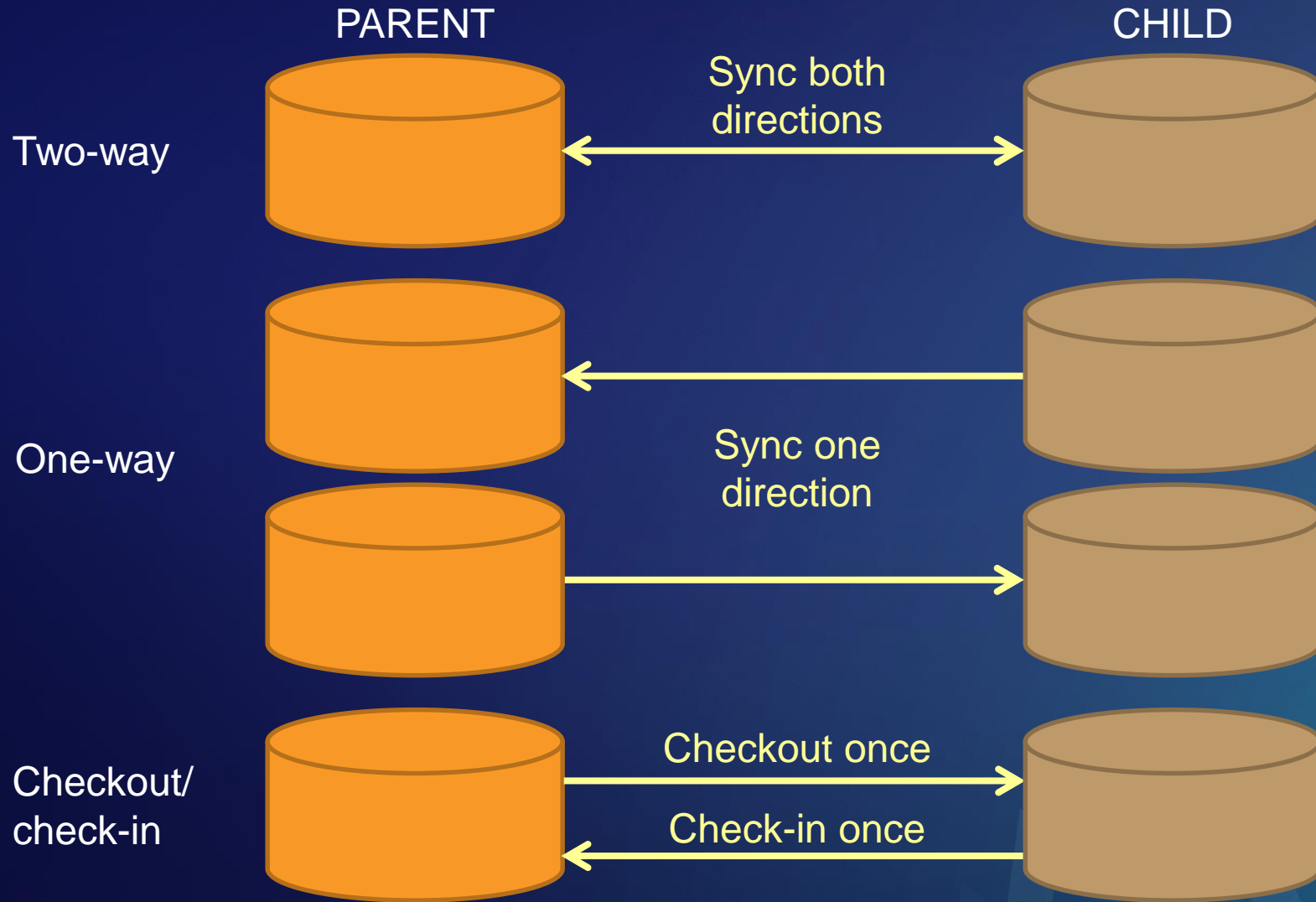
Why Distribute Data

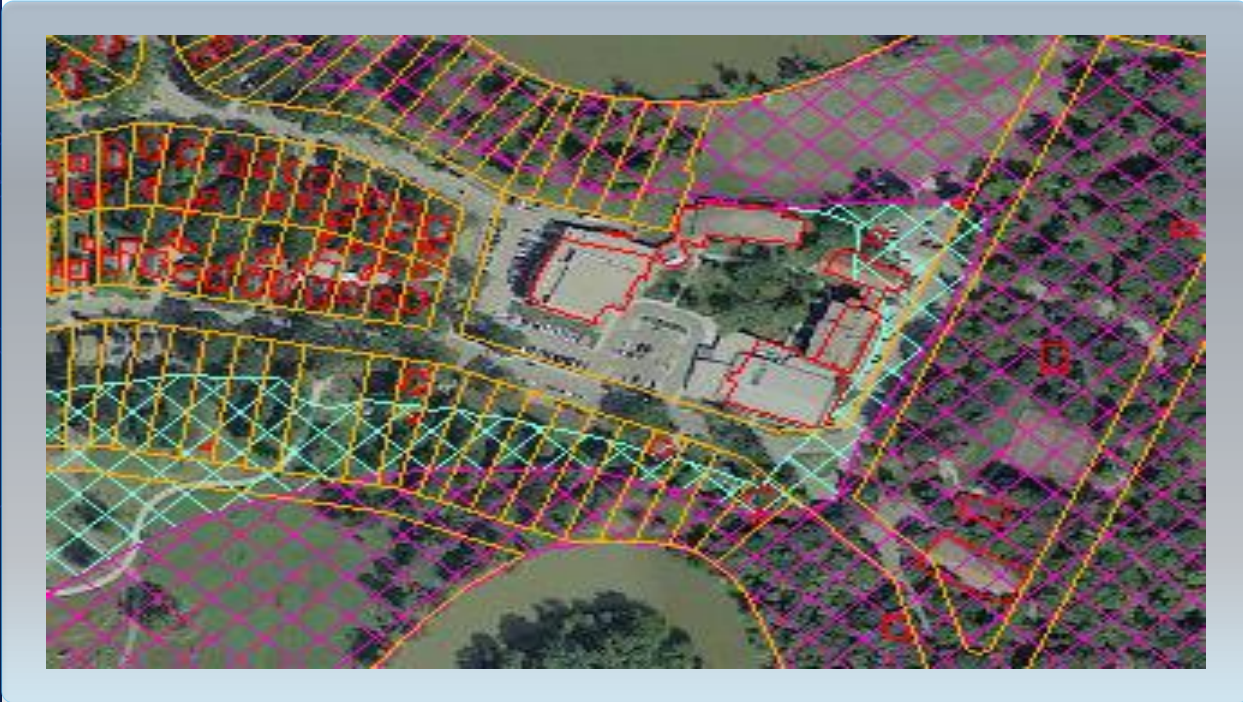


Geodatabase Replication Overview

- Distribute data across 2 or more geodatabases
- Replica Pair
- Geodatabases are edited independently
- Synchronize edits

Three types of replication





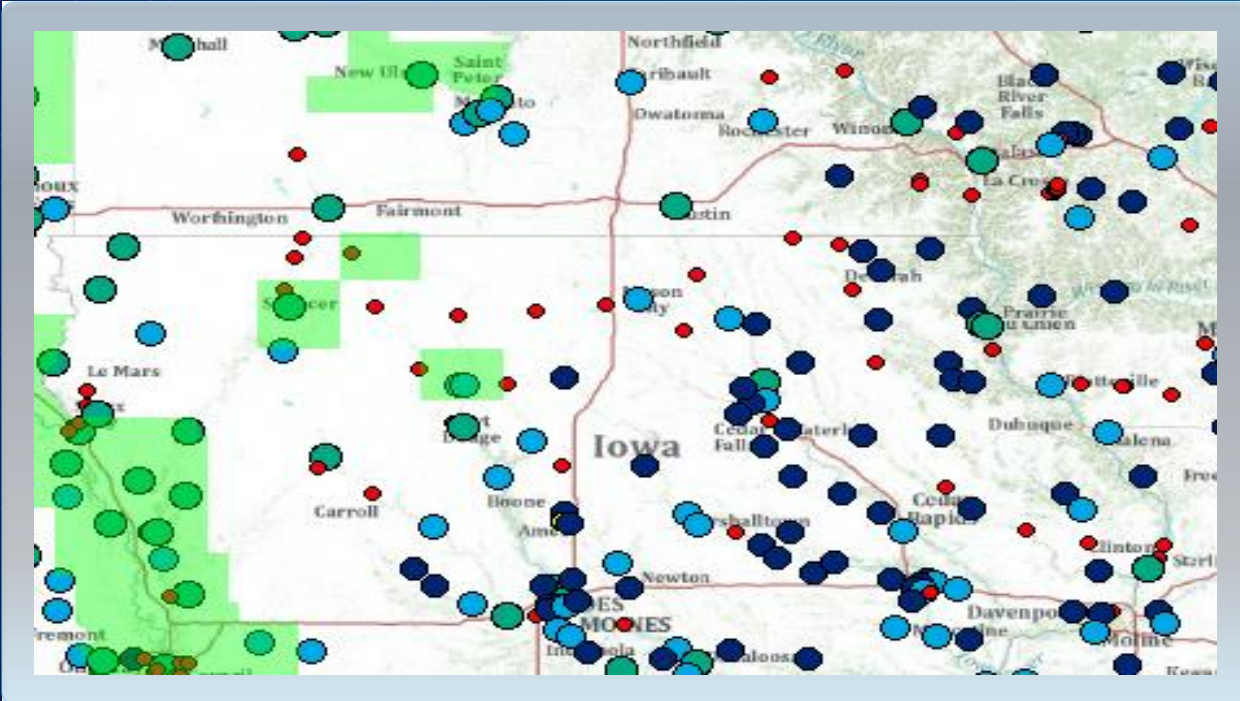
Replication Demo

Schema Changes

- 1 Compare schemas
- 2 Export changes



- 3 Import changes



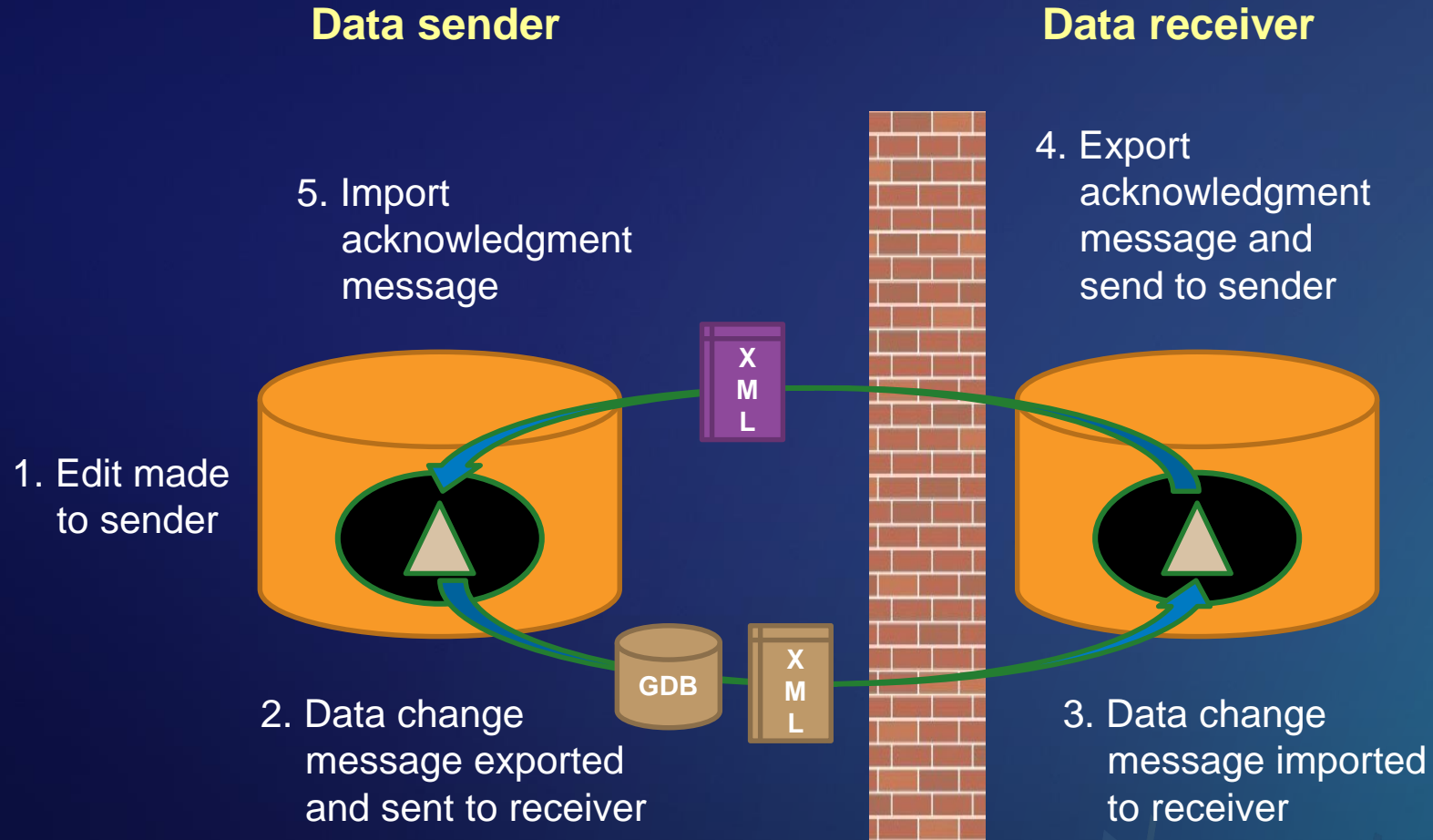
Schema Changes Demo

Add a Field Replication Demo

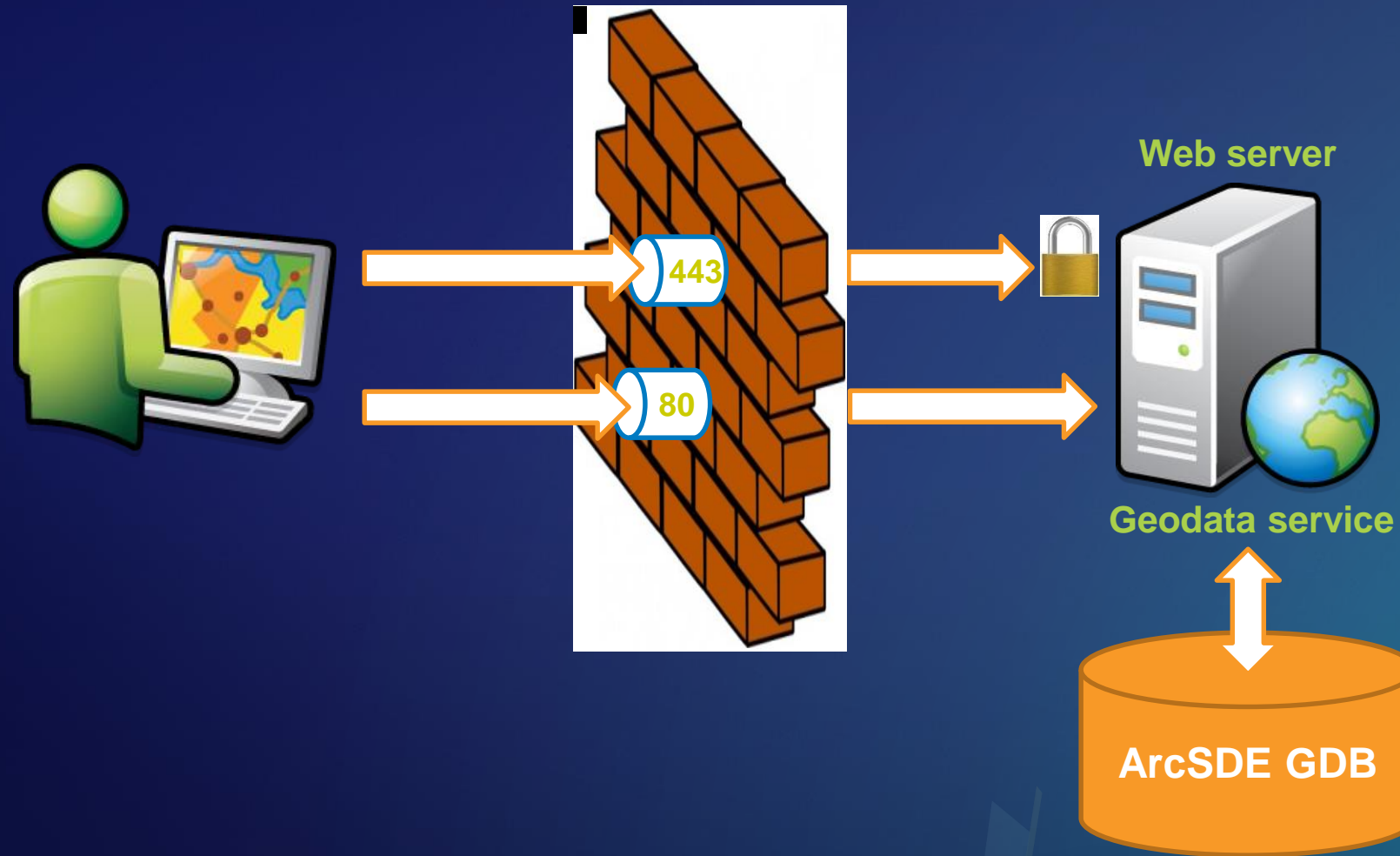
Tools are provided for this purpose:

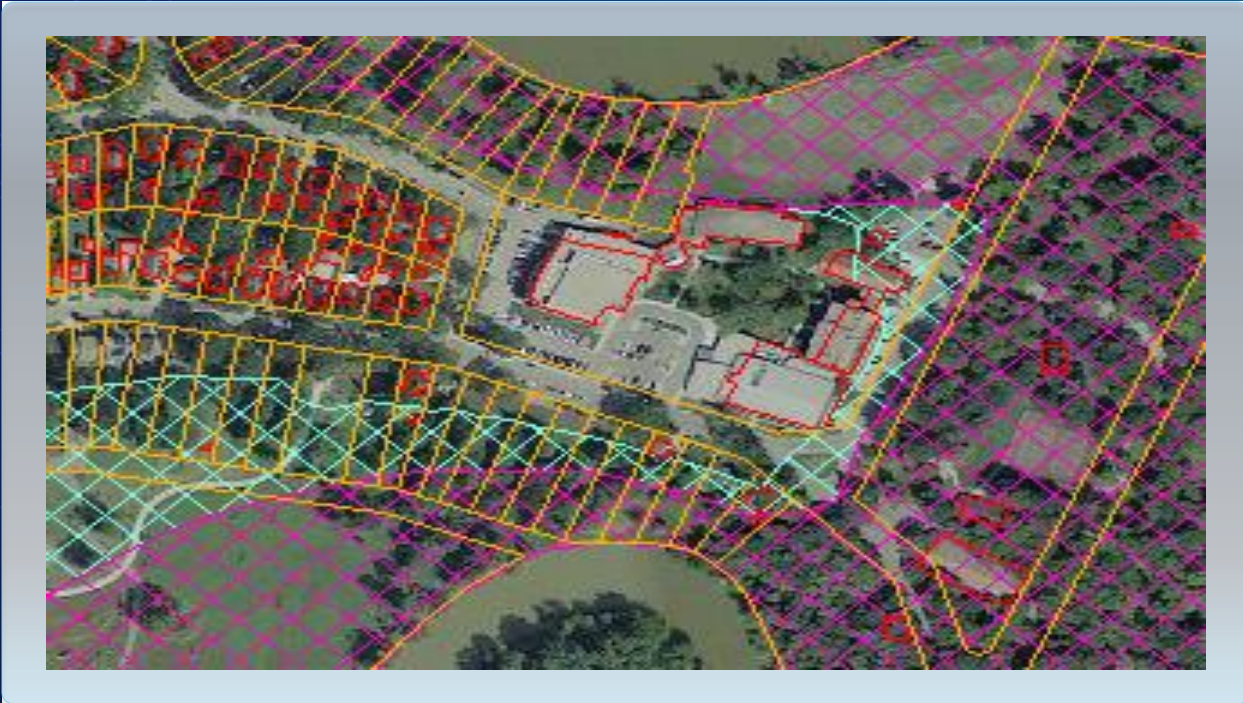
- Compare Replica Schema
- Import Replica Schema

Disconnected replication



How does a geodata service work?





Geodata Service Demo

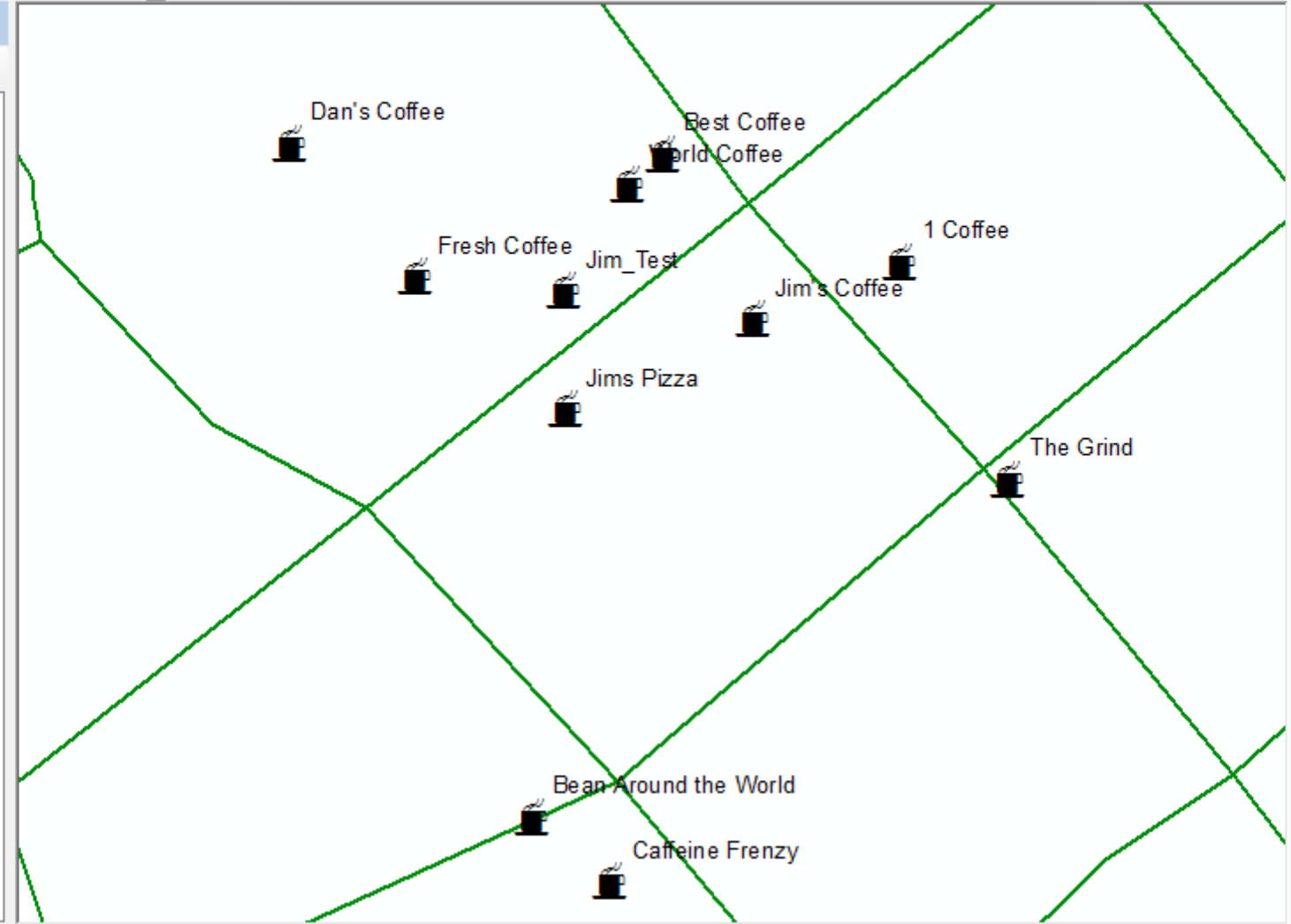
One-Way Geodatabase Replication Using a Geodata Service Demo

Data requirements

- ✓ Stored in high-precision spatial format
- ✓ Non-versioned or fully versioned (no move to base option)
- ✓ Must have GlobalIDs
- ✓ The database user must have write permission to the data

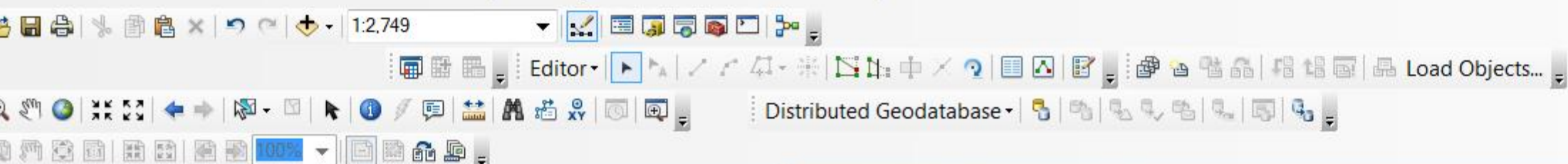
County_Parent

- SDE.DEFAULT (orcl)
- GIS.COF
- GIS.STREETS



Catalog

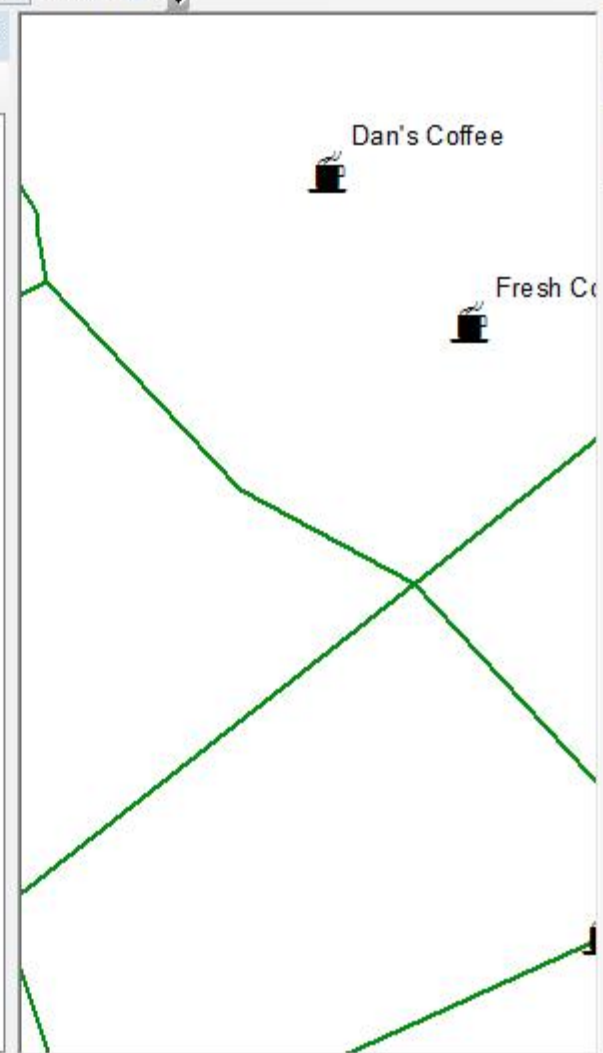
- Location: Oracle_County_GIS.sde
- Home - Documents\ArcGIS
 - Folder Connections
 - C:\Jim\UC_Connections
 - Oracle_County_GIS.sde
 - SQL_Child_GIS.sde
 - SQL_Office_GIS.sde
 - SQL_Parent_GIS.sde
 - Geodata_service.mxd
 - NEW.GIS.Boundaries.lyr
 - C:\Jim\UC_File_Geodatabases
 - D:\jim\share
 - D:\jim\share\ARCGIS_SERVER
 - D:\jim\share\ARCGIS_SERVER\Data
 - D:\jim\Student
 - \\jamesg\share
 - Toolboxes
 - Database Servers
 - Add Database Server
 - JAMESG_SQLEXPRESS.gds
 - Database Connections



Of Contents

County_Parent

- SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS



Catalog

Location: Oracle_County_GIS.sde

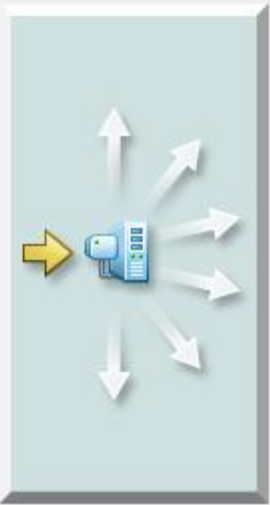
- Home - Documents\ArcGIS
 - Folder Connections
 - C:\Jim\UC_Connections
 - Oracle_County_GIS.sde**
 - SQL_Child_GIS.sde
 - SQL_Office_GIS.sde
 - SQL_Parent_GIS.sde
 - Geodata_service.mxd
 - NEW.GIS.Boundaries
 - C:\Jim\UC_File_Geodata
 - D:\jim\share
 - D:\jim\share\ARCGIS_SE
 - D:\jim\share\ARCGIS_SE
 - D:\jim\Student
 - \\jamesg\share
 - Toolboxes
 - Database Servers
 - Add Database Server
 - JAMESG_SQLEXPRESS.g
 - Database Connections
 - Add Database Connecti

- Copy
- Paste
- Delete
- Rename
- Refresh
- Make Default Geodatabase
- New
- Import
- Export
- Administration
- Distributed Geodatabase
- Connect
 - Share As GeoData Service**
 - Share this geodatabase as a geodata service using ArcGIS Server.
- Disconnect
- Connection P
- Geodatabase
 - Share as Geodata Service...**
 - Item Description...
 - Properties...

720979.786 Feet

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS

Share as Service



- Publish a service
- Save a service definition file
- Overwrite an existing service

[About sharing a service](#)

Next > Cancel

- JAMESG_SQLEXPRESS.gds
- Database Connections
 - Add Database Connection

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS

Publish a Service

Choose a connection

arcgis on jamesg_6080 (admin)

Server type: ArcGIS Server

Service name

County_Information

< Back Next > Cancel

- JAMESG_SQLEXPRESS.gds
- Database Connections
 - Add Database Connection

Publish a Service

Publish service to folder

Use existing folder [root]

Create new folder

< Back Continue Cancel

Publish your GIS resource

- General
- Parameters
- Capabilities
- Geodata
- Pooling
- Processes
- Item Description
- Sharing

General

General

Service Name:

Connection:

Type of Server:

Type of Service:

Start service immediately

Of Contents

County_Parent

- SDE.DEFAULT (or
- GIS.COF
- GIS.STREETS

Errors 2 Warnings

Severity	Status
Low	Unreso
Low	Unreso

Type
Workspace
Workspace

Complete

Show only unresolved ite



Of Contents



County_Parent

- SDE.DEFAULT (or
- GIS.COF
- GIS.STREETS

Errors 2 Warnings

Severity	Status
Low	Unreso
Low	Unreso

- General
- Parameters
- Capabilities
- Geodata
- Pooling
- Processes
- Item Description
- Sharing

General

General


Service Name:

Connection:


Type of Service:

Type of Service:

Publishing service ...



Processing data on server - please wait.



Cancel

Complete

Show only unresolved items





Of Contents



County_Parent

- SDE.DEFAULT (or
- GIS.COF
- GIS.STREETS

Errors 2 Warnings

Severity	Status
Low	Unreso
Low	Unreso

- General
- Parameters
- Capabilities
- Geodata
- Pooling
- Processes
- Item Description
- Sharing

General

General


Service Name:

Connection:

Type of Server:

Type of Service:

Succeeded



Successfully published service.

OK

Complete



- New... Ctrl+N
- Open... Ctrl+O
- Save Ctrl+S
- Save As...
- Save A Copy...
- Share As
- Add Data
- Sign Out - jim2stuff
- ArcGIS Online...
- Page and Print Setup...
- Print Preview...
- Print...
- Export Map...
- Analyze Map...
- Map Document Properties...
- 1 D:\...\Two_way_demo.mxd
- 2 D...\NaturalResources.mxd
- 3 D:\ji...\Landscape A0.mxd
- 4 D:\jim\S...\AdoptTrail.mxd
- 5 C...\training_locations.mxd
- 6 C:\...\Geodata_service.mxd
- 7 D:\j...\One_way_demo.mxd
- 8 D:\jim\share\test.mxd

1:2,749

Editor

Distributed Geodatabase

Load Objects...

Map Package...

Tile Package...

ArcGIS Runtime Content...

Service...

Coffee

Fresh Coffee

Service

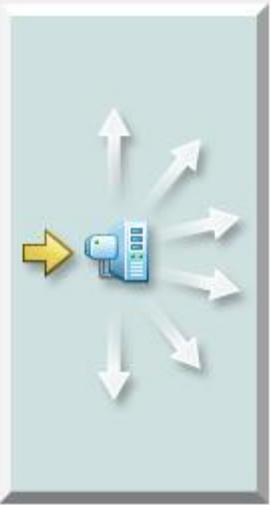
Publish this map as a service on the web using either ArcGIS Server or ArcGIS Online. This command is disabled if you are currently in Layout view.

Catalog

Location: Oracle_County_GIS.sde

- Home - Documents\ArcGIS
- Folder Connections
 - C:\Jim\UC_Connections
 - Oracle_County_GIS.sde
 - SQL_Child_GIS.sde
 - SQL_Office_GIS.sde
 - SQL_Parent_GIS.sde
 - Geodata_service.mxd
 - NEW.GIS.Boundaries.lyr
 - C:\Jim\UC_File_Geodatabases
 - D:\jim\share
 - D:\jim\share\ARCGIS_SERVER
 - D:\jim\share\ARCGIS_SERVER\Database
 - D:\jim\Student
 - \\jamesg\share
- Toolboxes
- Database Servers
 - Add Database Server
 - JAMESG_SQLEXPRESS.gds
- Database Connections
 - Add Database Connection

Share as Service



- Publish a service
- Save a service definition file
- Overwrite an existing service

[About sharing a service](#)

Next > Cancel

Publish a Service

Choose a connection

arcgis on jamesg_6080 (admin)

Server type: ArcGIS Server

Service name

County_Information

< Back Next > Cancel

JAMESG_SQLEXPRESS.gds
Database Connections
Add Database Connection

Publish a Service

Publish service to folder


Use existing folder [root]

Create new folder

< Back Continue Cancel



Of Contents

- County_Parent
 - SDE.DEFAULT (or
 - GIS.COF
 - 
 - GIS.STREETS

Errors 2 Warnings

Severity	Status
Low	Unresol
Low	Unresol
Low	Unresol

Complete

General

- Parameters
- Capabilities
 - Mapping
 - KML
- Pooling
- Processes
- Caching
- Item Description
- Sharing

General

General

Service Name:

Connection:

Type of Server:

Type of Service:

Start service immediately

Publish your GIS resource

Type
Data Frame
Data Frame

Show only unresolved ite

Edit View Bookmarks

Of Contents

County_Parent

- SDE.DEFAULT (or
- GIS.COF
- GIS.STREETS

Errors **2 Warnings**

Severity	Status
Low	Unresol
Low	Unresol
Low	Unresol

Complete

General

Parameters

Capabilities

- Mapping
- KML

Pooling

Processes

Caching

Item Description

Sharing

General

General

Service Name:


Connection:

Type of Server:

Type of Service:

Start service immediately

Service Publishing Result

 The service has been published successfully.

OK

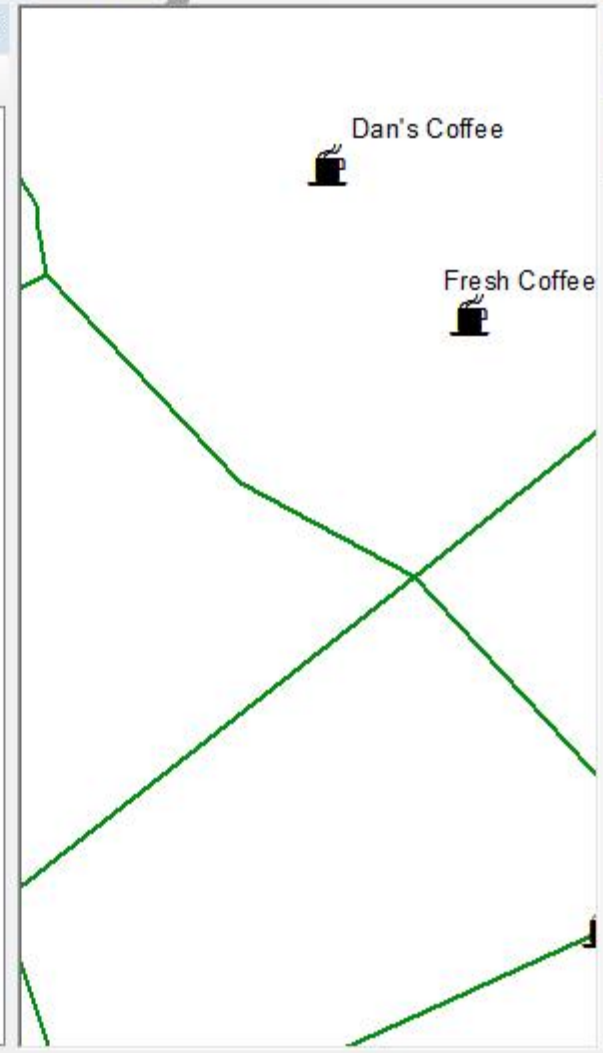
Type

- Data Frame
- Data Frame

Show only unresolved items

Of Contents

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 -  Dan's Coffee
 -  Fresh Coffee
 - GIS.STREETS



Catalog

Location: County_Information.GeoDataSource

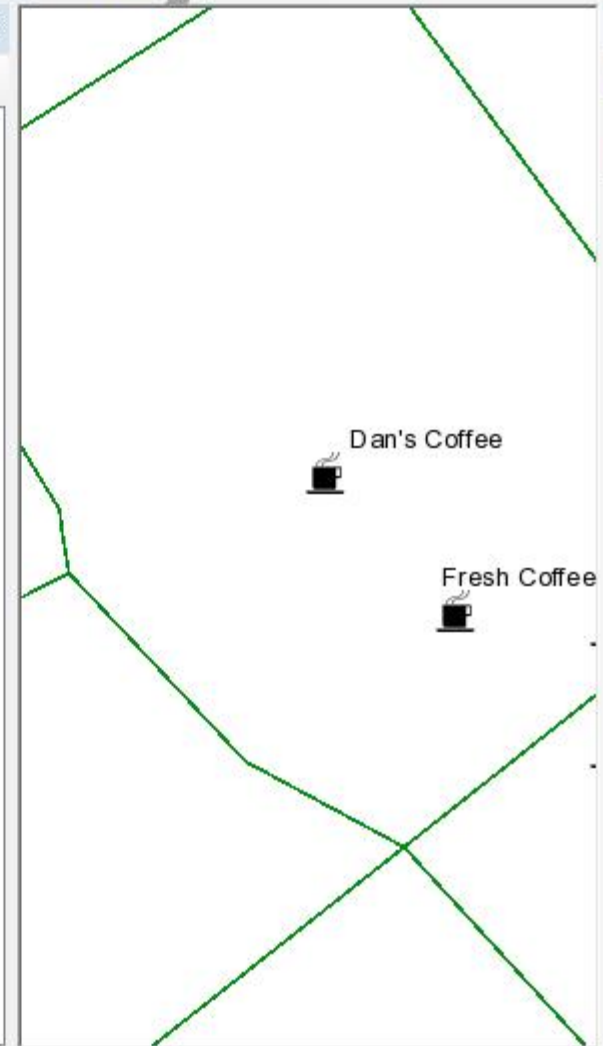
- arcgis on jamesg_6080 (admin)
 - City
 - Imagery
 - System
 - Utilities
 - AddNotesModel
 - County_Information**
 - County_Information
 - DeleteNote
 - INFO
 - MyCustomPrinting
 - NaturalResources
 - SampleWorldCities
 - Two_Way_Service
 - Two_Way_Service
- arcgis on services.arcgisonline.com (user)
- JAMESG
- Search Features
- My Hosted Services (Jims Stuff)
- Ready-To-Use Services (Jims Stuff)

Of Contents

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS

County_Information_Service

- County_Information



Catalog

Location: County_Information

- arcgis on jamesg_6
 - City
 - Imagery
 - System
 - Utilities
 - AddNotesModel
 - County_Information
 - County_Information
 - DeleteNote
 - INFO
 - MyCustomPrinting
 - NaturalResources
 - SampleWorldCities
 - Two_Way_Service
 - Two_Way_Service
 - Drafts
 - arcgis on services.arcgisonline.com (user)
 - JAMESG
 - Search Features
 - My Hosted Services (Jims Stuff)
 - Ready-To-Use Services (Jims Stuff)

Create Replica

Create a child replica from an ArcSDE database to another database so it can be edited



Of Contents

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS
- County_Information_Service
 - County_Information

Create Replica Wizard

This wizard lets you create a replica between this geodatabase and another geodatabase. By default, all feature classes and tables in the map that can be part of the replica are included, along with any related data.

What type of Replica do you want to create?

Check-out

A check-out allows you to edit the data in the child geodatabase and then synchronize the edits with the parent geodatabase. Once the edits have been synchronized, you can no longer synchronize additional edits.

Two way replica

A two way replica allows you to edit the data in either replica geodatabase and periodically synchronize the geodatabases. All data must be versioned, have a global ID column and both geodatabases must be ArcSDE geodatabases.

One way replica

Parent to child Child to parent

A one way replica allows you to send changes in one direction. Choose to send from either a parent ArcSDE geodatabase to any type of child geodatabase or from a child ArcSDE geodatabase to a parent ArcSDE geodatabase. All data must have a global ID column.

[About creating](#)

< Back Next > Cancel

Load Objects...

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS

County_Information_Service

- County_Information

Create Replica Wizard

This wizard lets you create a replica between this geodatabase and another geodatabase. By default, all feature classes and tables in the map are included, along with any related data.


Replicating data from:

What do you want to replicate?

Data Schema Only Register existing data only

Which geodatabase do you want to replicate data to?

Geodatabase XML Document



What do you want to call this Replica?

Show advanced options for overriding replica defaults when I click Next

[About extracting data](#)

< Back Next > Cancel

Load Objects...



Of Contents


- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS

County_Information_Service

- County_Information

Post Create Replica Options

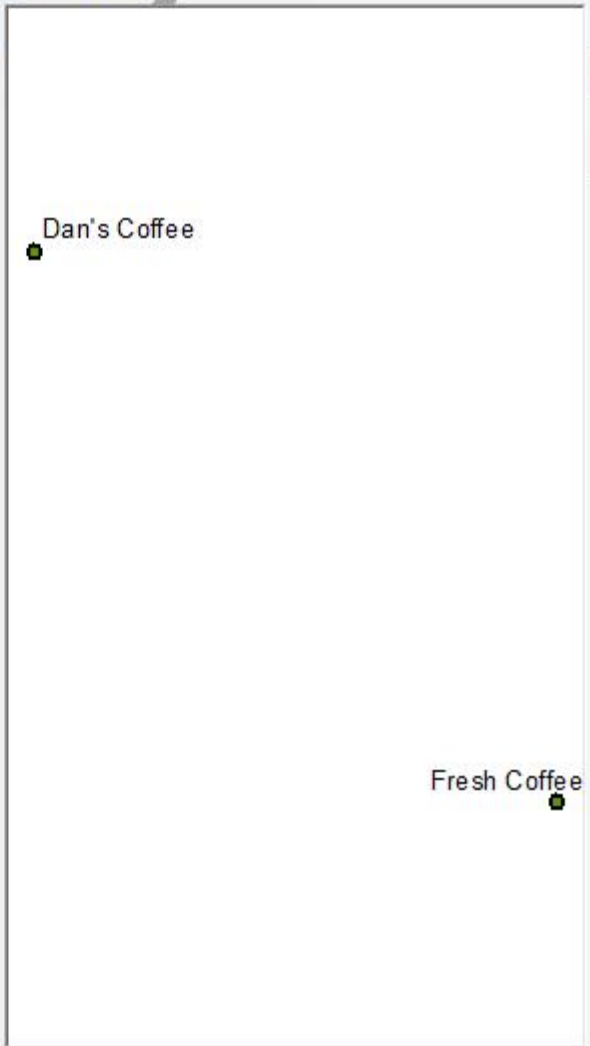
What do you want to do once the check out has been completed?

- No further action
- Change the layers and tables to point to the checked out data
- Save a copy of this map document with the layers and tables pointing at the check-out data:
 

Load Objects...

Of Contents

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS
- County_Information_Service
 - County_Information
- Child
 - sde.DEFAULT (JAMESG)
 - Child.GIS.COF



Catalog

Location: Child.GIS.COF

- Home - Documents\ArcGIS
- Folder Connections
 - C:\Jim\UC_Connections
 - Oracle_County_GIS.sde
 - SQL_Child_GIS.sde
 - Child.GIS.COF
 - SQL_Office_GIS.sde
 - SQL_Parent_GIS.sde
 - Geodata_service.mxd
 - NEW.GIS.Boundaries.lyr
 - C:\Jim\UC_File_Geodatabases
 - D:\jim\share
 - D:\jim\share\ARCGIS_SERVER
 - D:\jim\share\ARCGIS_SERVER\Database
 - D:\jim\Student
 - \\jamesg\share
- Toolboxes
- Database Servers
 - Add Database Server
 - JAMESG_SQLEXPRESS.gds
- Database Connections

County_Parent

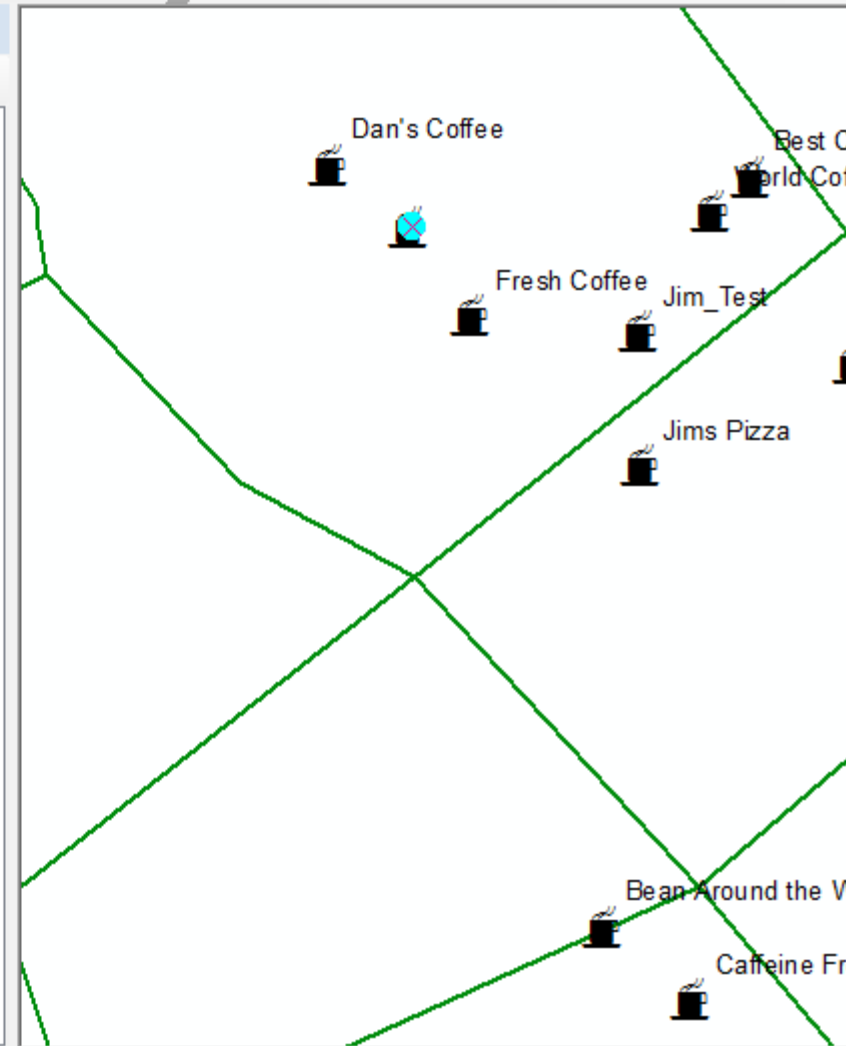
- SDE.DEFAULT (orcl)
- GIS.COF
- GIS.STREETS

County_Information_Service

- County_Information

Child

- sde.DEFAULT (JAMESG)
- Child.GIS.COF



<Search>

- GIS.COF
- GIS.COF

- Point
- Point at end of line

- GIS.COF
- 663

OBJECTID	663
NAME	Between Coffee
Revenue	<Null>
Comments	<Null>
GLOBALID	{5883A4F1-C028-
TEST	<Null>
PARENT_FLD	<Null>
P2	<Null>
P3	<Null>

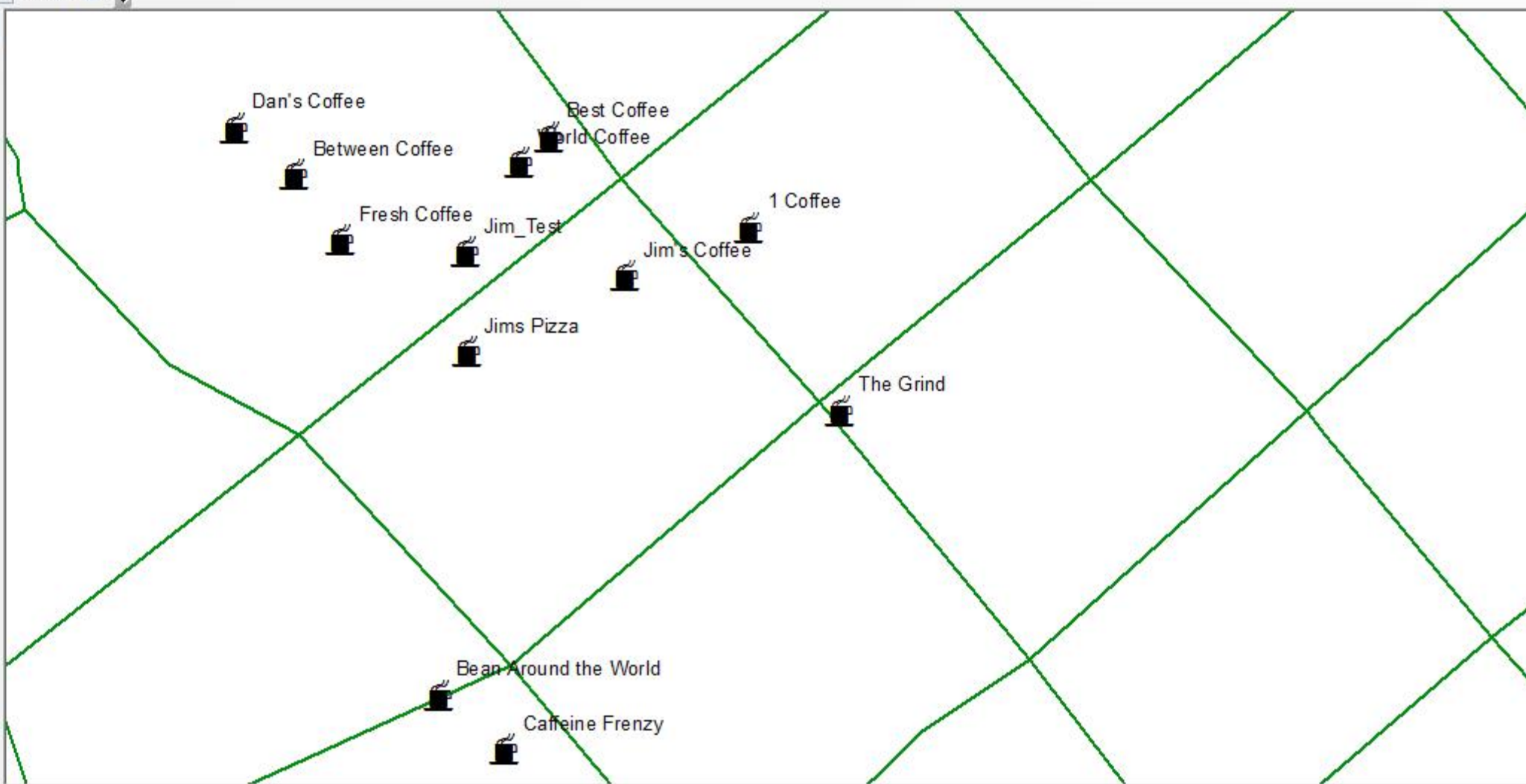
NAME

Text (Length = 40)

Null values allowed

Of Contents

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS
- County_Information_Service
 - County_Information
- Child
 - sde.DEFAULT (JAMESG)
 - Child.GIS.COF



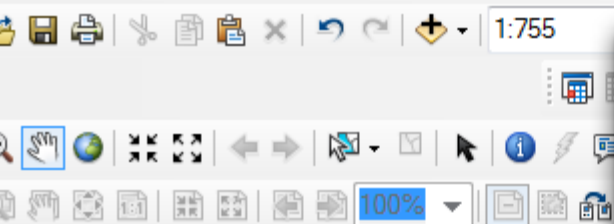
Of Contents

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - 
 - GIS.STREETS
- County_Information_Service
 - County_Information
- Child**
 - sde.DEFAULT (JAMESG)
 - Child.GIS.COF
 - 

Synchronize Changes
Synchronize data between a child and a parent replica

Dan's Coffee

Fresh Coffee



Of Contents

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - GIS.STREETS
- County_Information_Service
 - County_Information
- Child
 - sde.DEFAULT (JAMESG)
 - Child.GIS.COF

Synchronize Changes Wizard

The wizard allows you to synchronize changes between replicas

Geodatabase 1 - The geodatabase that you have chosen to synchronize

JAMESG-sde:sqlserver:JAMESG-Child

Replica To Synchronize: GIS.From_County_Geodata_Service

Geodatabase 2 - The geodatabase containing the relative replica

County_Information

Replica Type: One way parent to child

The Synchronize Direction: From Geodatabase 2 to Geodatabase 1

[About synchronizing changes](#)

< Back Finish Cancel

Load Objects...

offee



1:755

Editor

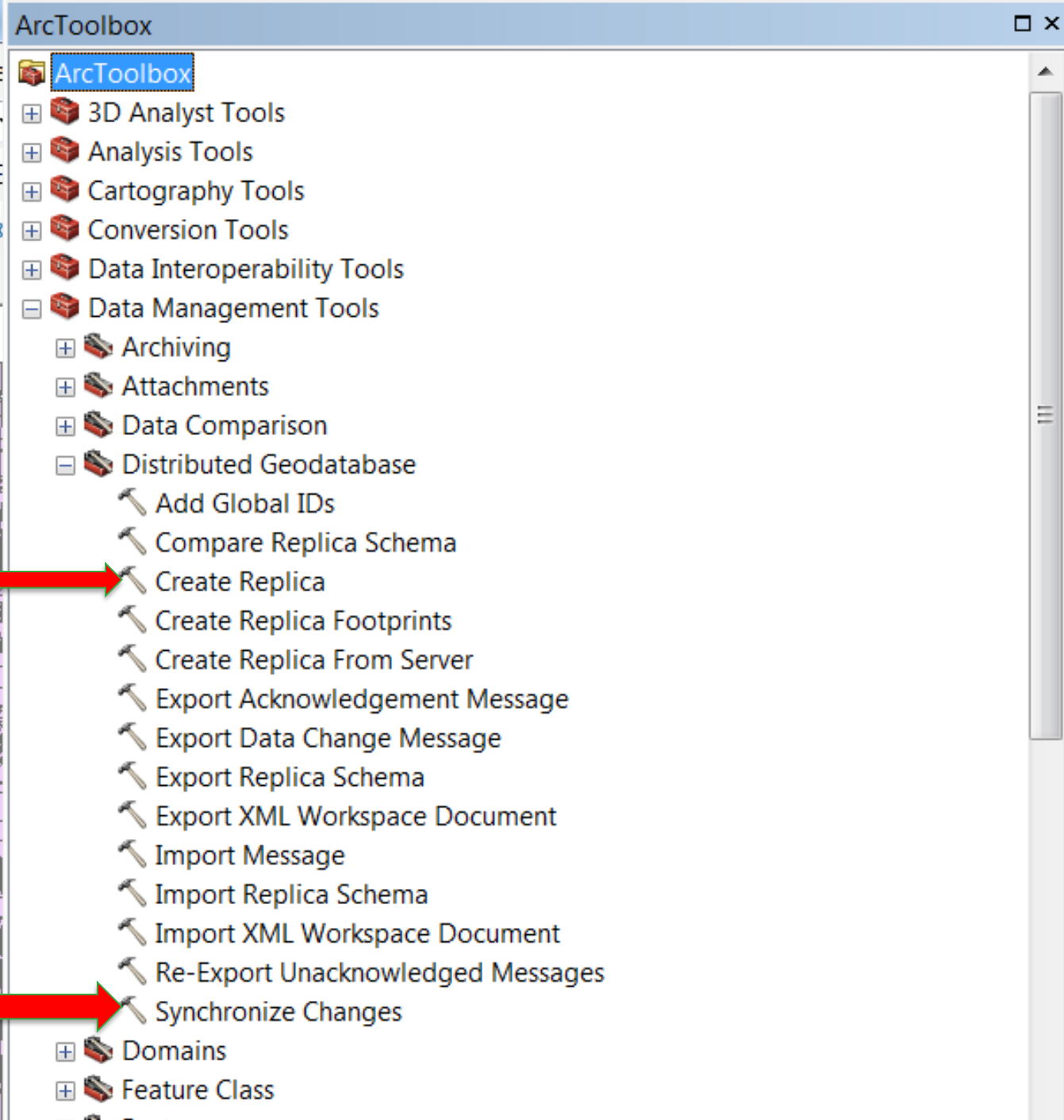
Distributed Geodatabase

Load Objects...

Of Contents

- County_Parent
 - SDE.DEFAULT (orcl)
 - GIS.COF
 - 
 - GIS.STREETS
- County_Information_Service
 - County_Information
- Child**
 - sde.DEFAULT (JAMESG)
 - Child.GIS.COF
 - 



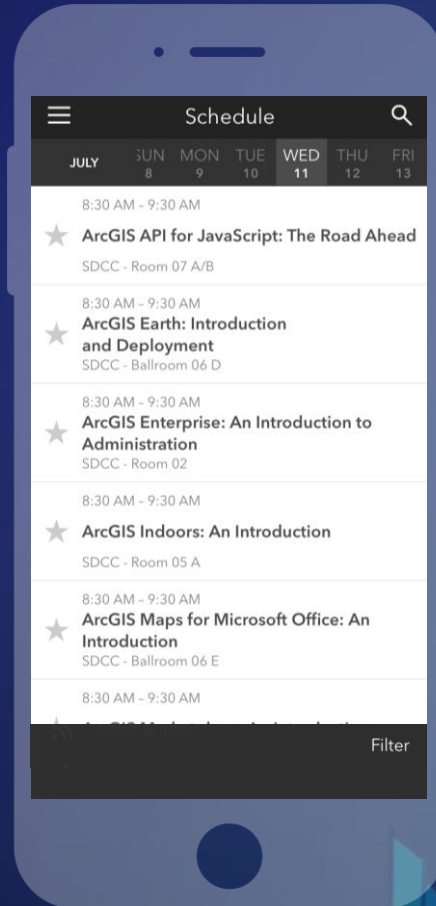


Please Take Our Survey on the App

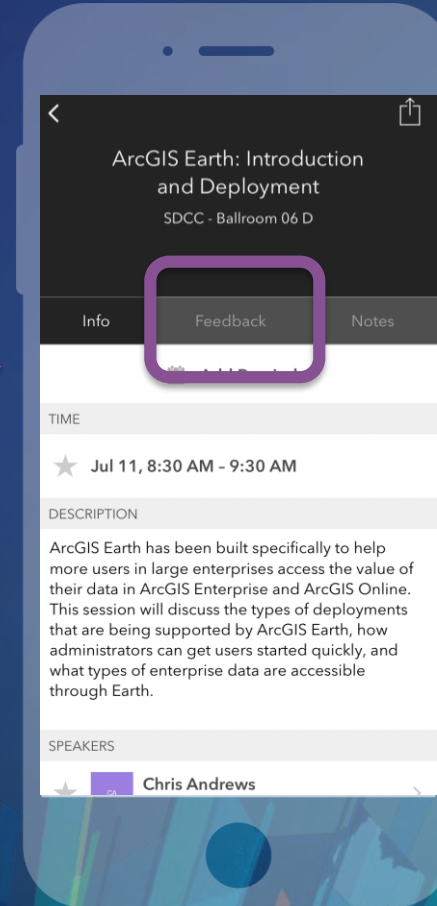
Download the Esri Events app and find your event



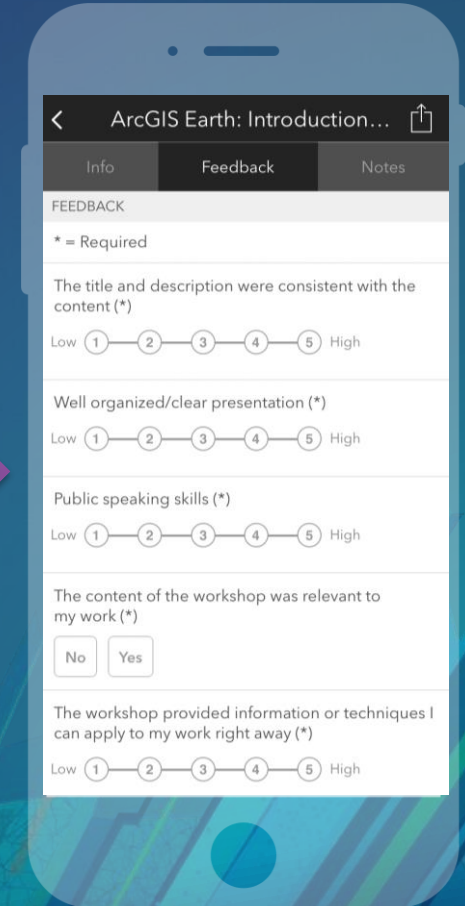
Select the session you attended



Scroll down to find the feedback section



Complete answers and select "Submit"





esri

THE
SCIENCE
OF
WHERE