Distributing Data
Using Geodatabase Replication

Student Edition
Course introduction

Introduction
Course goals
Additional resources
Installing the course data
Icons used in this workbook
Understanding the ArcGIS Platform

1 Defining geodatabase replication

Lesson introduction
What is replication?
Purpose of replication
Why use geodatabase replication?
Defining a replica pair
Three types of replication
Lesson review

2 Two-way replication

Lesson introduction
Two-way replication
Data preparation requirements
Creating a two-way replica
Synchronizing a two-way replica (connected)
Permission basics
Resolving conflicts automatically while synchronizing
Managing replicas
Exercise 2: Create and use a two-way replica
   Create parent and child geodatabases
   Prepare data to be replicated
   Create the two-way replica
   Make edits to the parent and child replicas
   Synchronize in each direction
   Automate synchronizations using Python
Lesson review

3 One-way replication

Lesson introduction
One-way replication
Why use one-way replication?
How does one-way replication work?
Using a different projection/coordinate system between replica pair
Data preparation requirements
Overview of archiving
One-way options
Simple vs. full feature model
Exercise 3: Create and use a one-way replica
  Prepare the data
  Extract the schema for the one-way replica
  Extract the data for the one-way replica
  Make edit in parent and synchronize to child
  View properties in Replica Manager
Lesson review

4  Checkout/check-in replication
Lesson introduction
Checkout/check-in replication
Data preparation
Checkout/check-in replication use cases
Checkout/check-in replication workflow
Exercise 4: Perform checkout/check-in replication
  Prepare data for checkout
  Check out data to the file geodatabase
  Create a replica footprint
  Make edits to the file geodatabase
  Check in edits
  Delete the previously checked out data
Lesson review

5  Disconnected replication
Lesson introduction
Network obstacles
Distributing your data offline
Disconnected synchronization
How to create a replica pair offline
Exercise 5: Perform disconnected replication
  Prepare data for replication
  Create a two-way replica using the XML option
  Create a child edit and export data change
  Import data change and exchange acknowledgment
  Switch roles and create a parent edit
  Import data change and exchange acknowledgment
Lesson review

6  Managing schema changes
Lesson introduction
Handling schema change
Comparing replica schemas
Importing schema changes
Exercise 6: Performing schema changes in a two-way replica
   Prepare data for replication
   Create a two-way replica and make a new field
   Compare and import the schema change
   Drop a feature class from the replica
   Manually perform the schema change and test the result
Lesson review

7 Implications of replication workflows
Lesson introduction
Replica logs
Achieving an effective compress
One-way archiving option
Manual conflict resolution
Exercise 7: Perform one-way replication using the archiving option
   Prepare the data
   Create the replica and create a new version
   Create an OLE DB connection
   Investigate the initial state of the database tables
   Make an edit and reconcile and post
   Compress the geodatabase and investigate tables
Lesson review

8 Replicating using geodata services
Lesson introduction
How does a geodata service work?
Examples of geodata services
Create a geodatabase service and a map service
Creating a geodata service
Exercise 8: Create a geodata service for use with replication
   Prepare the data
   Grant permissions to the ArcGIS for Server account
   Share a geodata service
   Create a map service
   Create a two-way replica
   Synchronize using the geodata service
Lesson review

Appendixes
Appendix A: Esri data license agreement
Appendix B: Answers to lesson review questions
Lesson 1: Defining geodatabase replication
Lesson 2: Two-way replication
Lesson 3: One-way replication
Lesson 4: Checkout/check-in replication
Lesson 5: Disconnected replication
Lesson 6: Managing schema changes
Lesson 7: Implications of replication workflows
Lesson 8: Replicating using geodata services