



*2022 ESRI USER CONFERENCE*

# Enterprise Geodatabase - Branch Versioning

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# Outline

Data  
Config



Editing



Branch  
Versioning



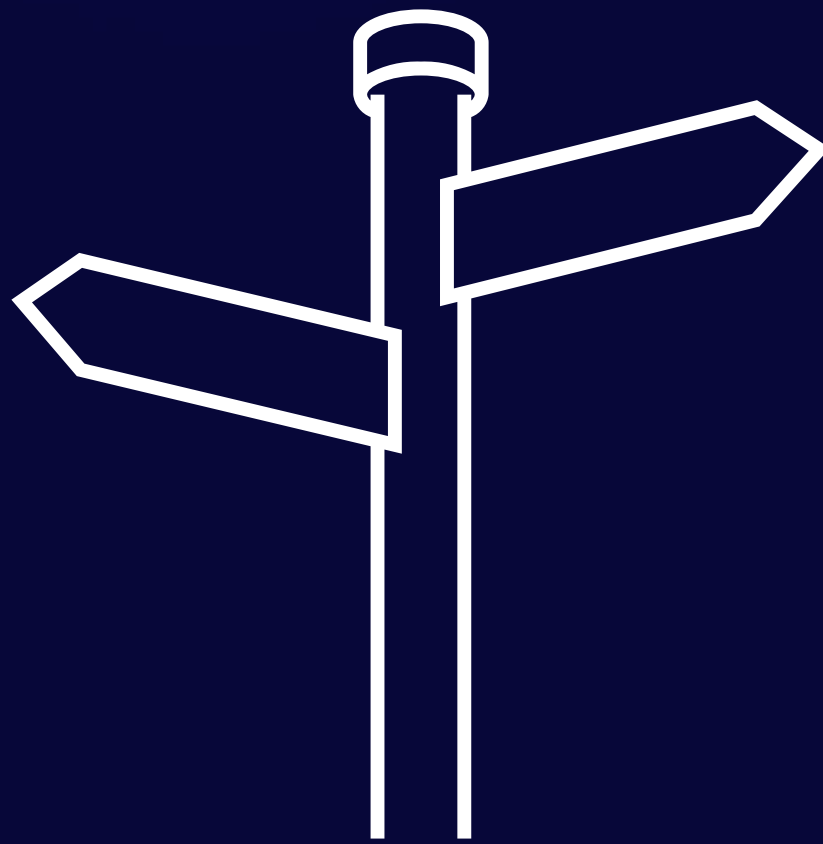
Version  
Admin



Review  
Versioning



What's  
New



# Versioning

## Overview

- Long transaction editing model
  - Isolation
  - Conflict detection
  - Undo/Redo
- Versions (snapshots)
  - Managed by system tables
- Types of versioning
  - Traditional
  - Branch



# Branch Versioning

## Overview

- ArcGIS Pro 2.1 and ArcGIS Enterprise 10.6
- Service-based architecture
  - Editing
  - Version administration
  - REST API access



# Architecture

## Branch versioning

- Simple table structure
- Temporal model – insert model
- Native archive support
- Editor tracking
  - Inserts, updates, and deletes
- System managed fields

<code>gdb_branch_id</code>	Long
<code>gdb_from_date</code>	Date
<code>gdb_is_delete</code>	Short
<code>gdb_deleted_at</code>	Date
<code>gdb_deleted_by</code>	Text
<code>gdb_archive_oid</code>	Object ID

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# Usability benefits

## Branch versioning

- Administration
  - Flat tree structure
  - Stateless - no compress / requirement to delete versions
  - Simultaneous editing/posting of default
- Conflicts persist across edit sessions
  - Filter / Mark as reviewed
  - Add notes



# Branch vs. Traditional versioning

## Comparison

### Similarities

- **Multi-user editing**
- **Editing workflows**
  - **Version creation**
  - **Reconcile/Post**

### Differences

- Data access
- Permissions
- Dataset support

—	✓	✓	✓
—		✓	✓
—			✓

# Branch vs. Traditional versioning

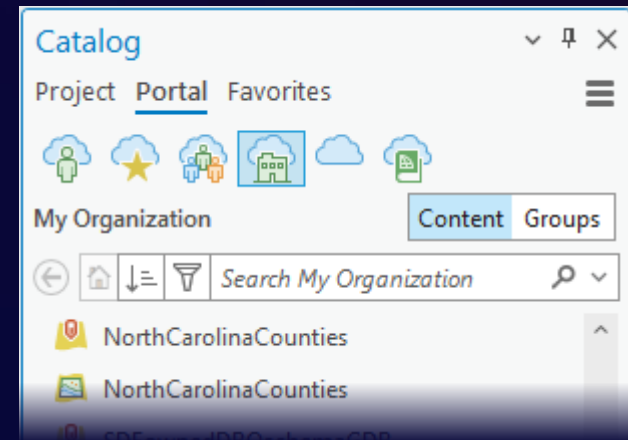
## Comparison

### Similarities

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  - Version creation
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### Differences

- **Data access**
- Permissions
- Dataset support





# Branch vs. Traditional versioning

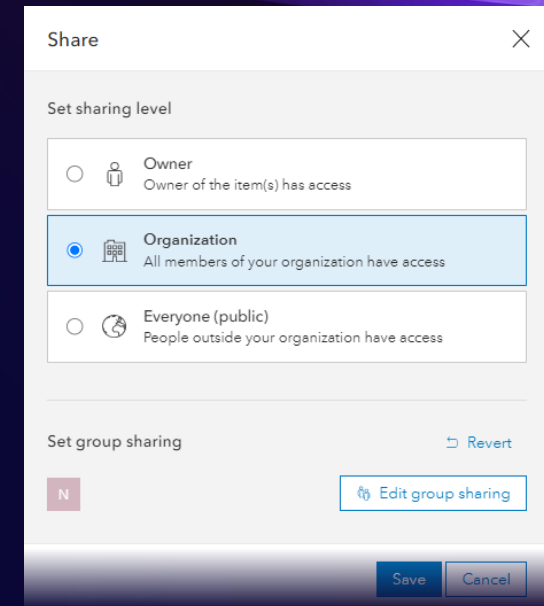
## Comparison

### Similarities

- Multi-user editing
- Editing workflows
  - Version creation
  - Reconcile/Post

### Differences

- Data access
- **Permissions**
- Dataset support



### Member roles

#### Manage roles

Create, edit, and manage member roles in your organization. You can create a role based on an existing role or role template by enabling or disabling associated privileges as needed. [Learn more about roles](#)

Create role

Search roles

Administrator	1	Default
Data Editor	0	Default
Publisher	2	Default
User	6	Default
Version Administrator	1	Custom ...
Viewer	1	Default

# Branch vs. Traditional versioning

## Comparison

### Similarities

- Multi-user editing
- Editing workflows
  - Version creation
  - Reconcile/Post

### Differences

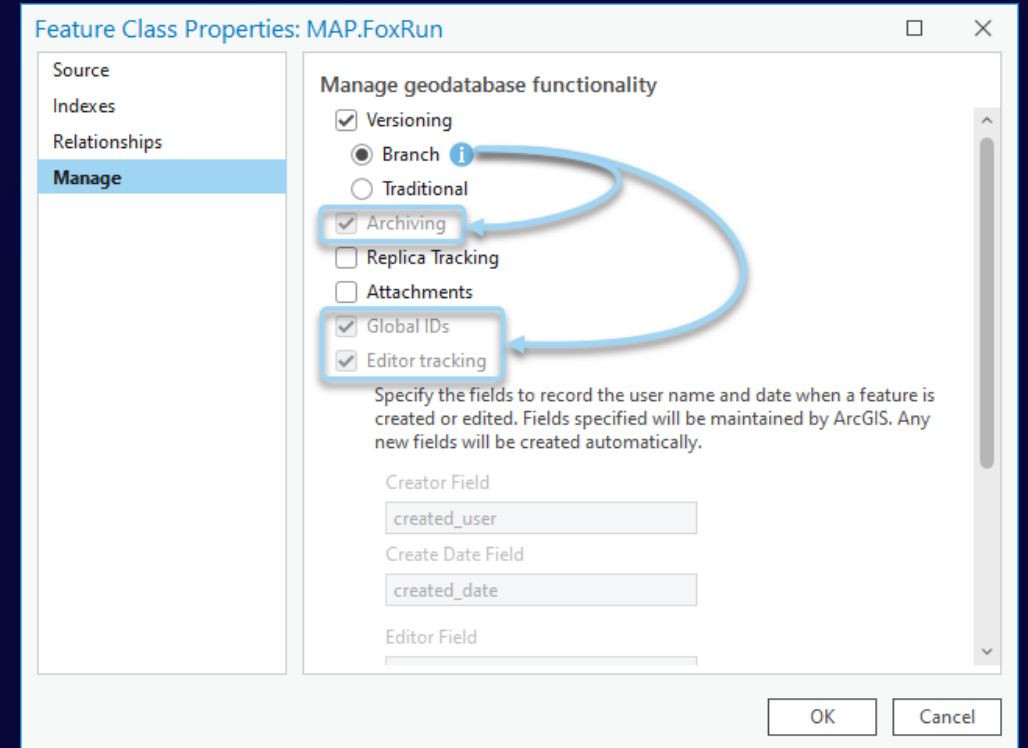
- Data access
- Permissions
- **Dataset support**

Dataset types	Branch versioning	Traditional versioning
Feature class	✓	✓
Table	✓	✓
Annotation	✓	✓
Dimension	✓	✓
Relationship class	✓	✓
Trace network	✓	
Utility network	✓	
Parcel fabric	✓	
Topology	✓	✓
Network dataset		✓
Terrain dataset		✓

# Register as versioned

## Branch versioning

- Data owner
- Pre-requisites
  - GlobalIDs
  - Editor tracking
  - Branch connection
  - Properties - Manage tab



# Share branch versioned data

## Publishing overview

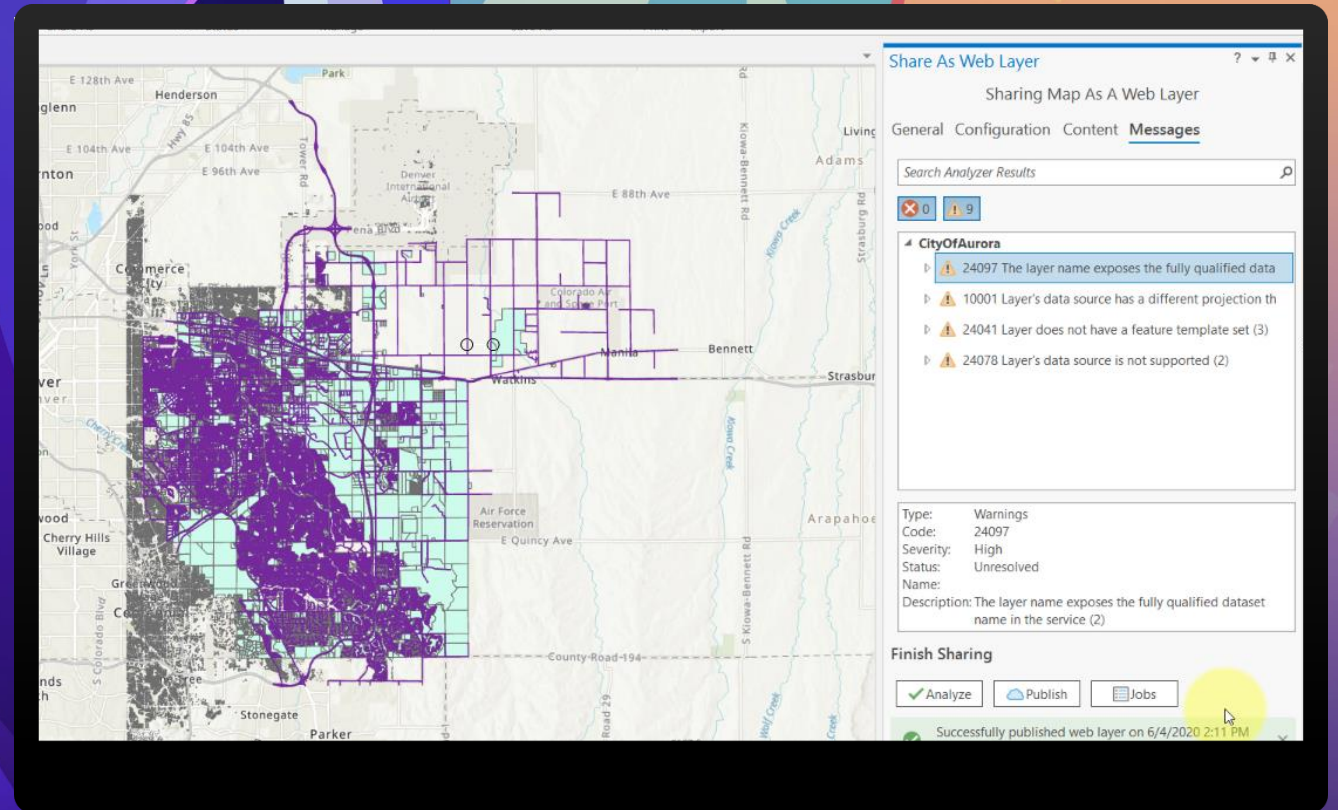
- Default version access
- Share as web layer
  - Branch database connection
  - Data owner
  - By reference
  - Version Management capability
- Share with - Organization / Groups

The image displays two overlapping screenshots of the 'Share As Web Layer' dialog box in ArcGIS Enterprise. The left screenshot shows the 'General' tab with the following settings: Name: NCCounties, Summary: North Carolina Counties, Tags: NCCounties, Data and Layer Type: Reference registered data, Map Image (selected), Feature (checked), Copy all data: Feature (selected), Location: Portal Folder (Select or create folder), Server and Folder: https://mjarman.esri.com/server (Select or create folder), Share with: ArcGIS Enterprise (checked), and Finish Sharing: Analyze, Publish. The right screenshot shows the 'Configuration' tab with the following settings: Layer(s): Map Image, Feature, Additional Layers: WMS, WFS, OGC Features, Capabilities: WCS, KML, Version Management (checked), Validation, Topographic Production, and Finish Sharing: Analyze, Publish, Jobs. Both screenshots have a blue box highlighting the 'Map Image' and 'Feature' options in the left dialog, and the 'Version Management' option in the right dialog.



# Preparing and Publishing Branch Versioned Data

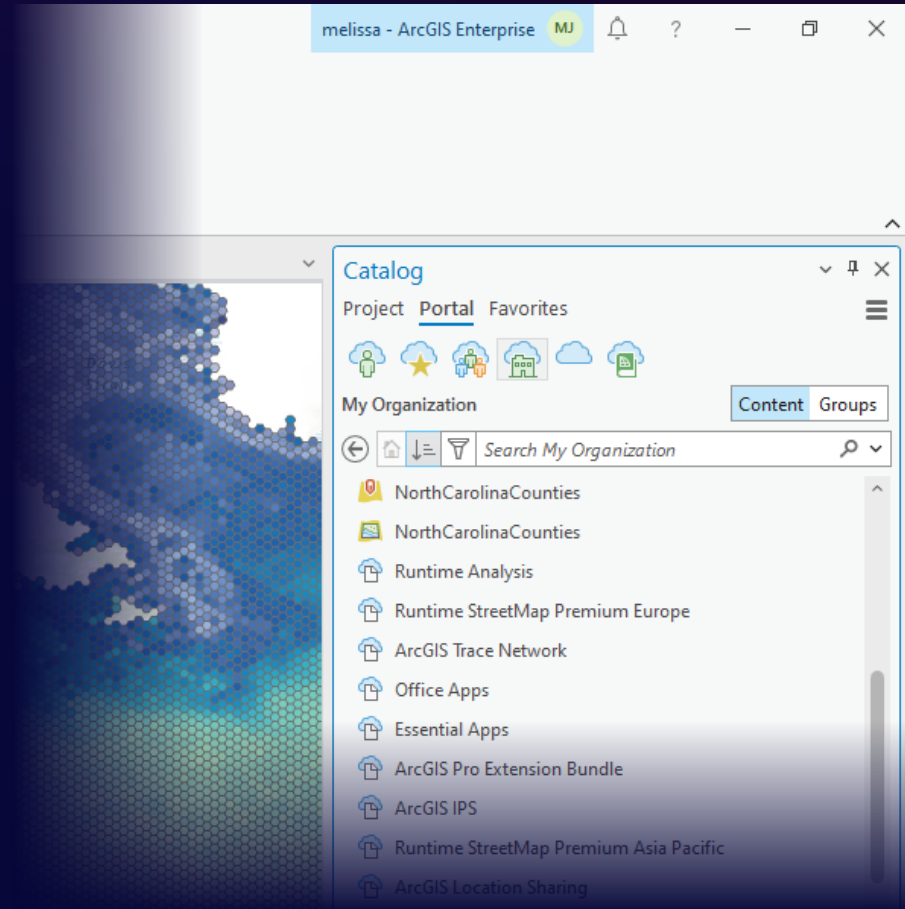
Justin Muise



# Editing

## Overview

- Access data from portal
- Edit default vs. named version



# Editing

ArcGIS Pro model

Editing of default vs. named version

## Editing model



### Default version

- No undo/redo
- Multiple readers
- Multiple editors

### Named version

- Undo/redo
- Multiple readers
- 1 editor

# Editing

## Conflicts during reconcile

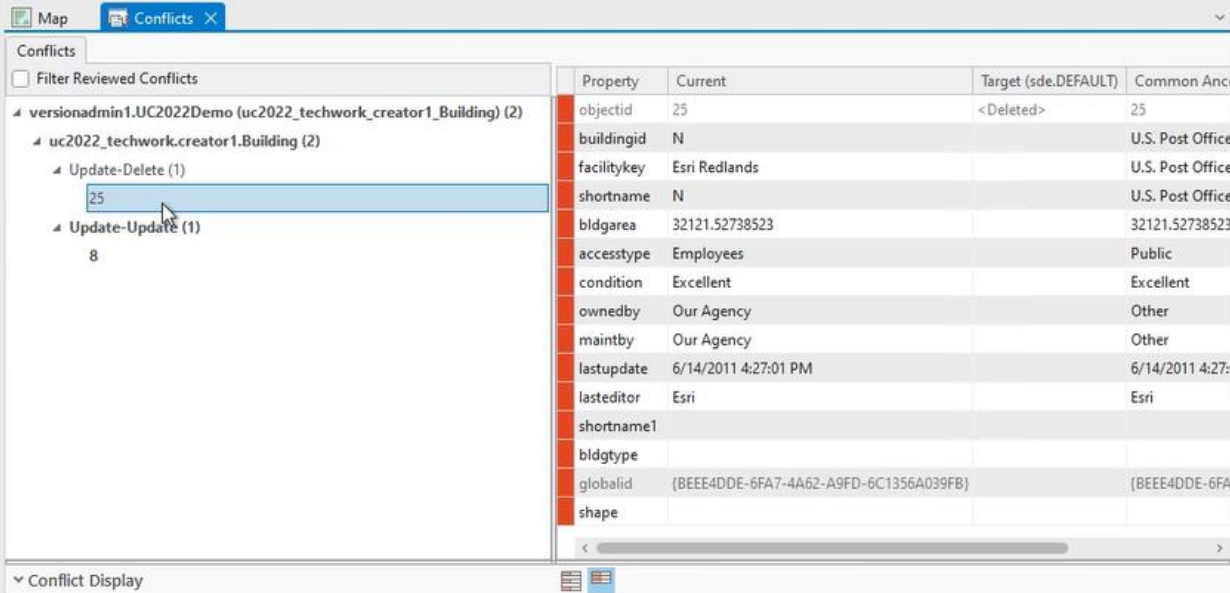
- Reconcile process

### Conflicts:

- Defined By attribute/object
- In favor of Edit version

- Conflict detection

- Enter notes
- Mark as reviewed
- Persisted across sessions



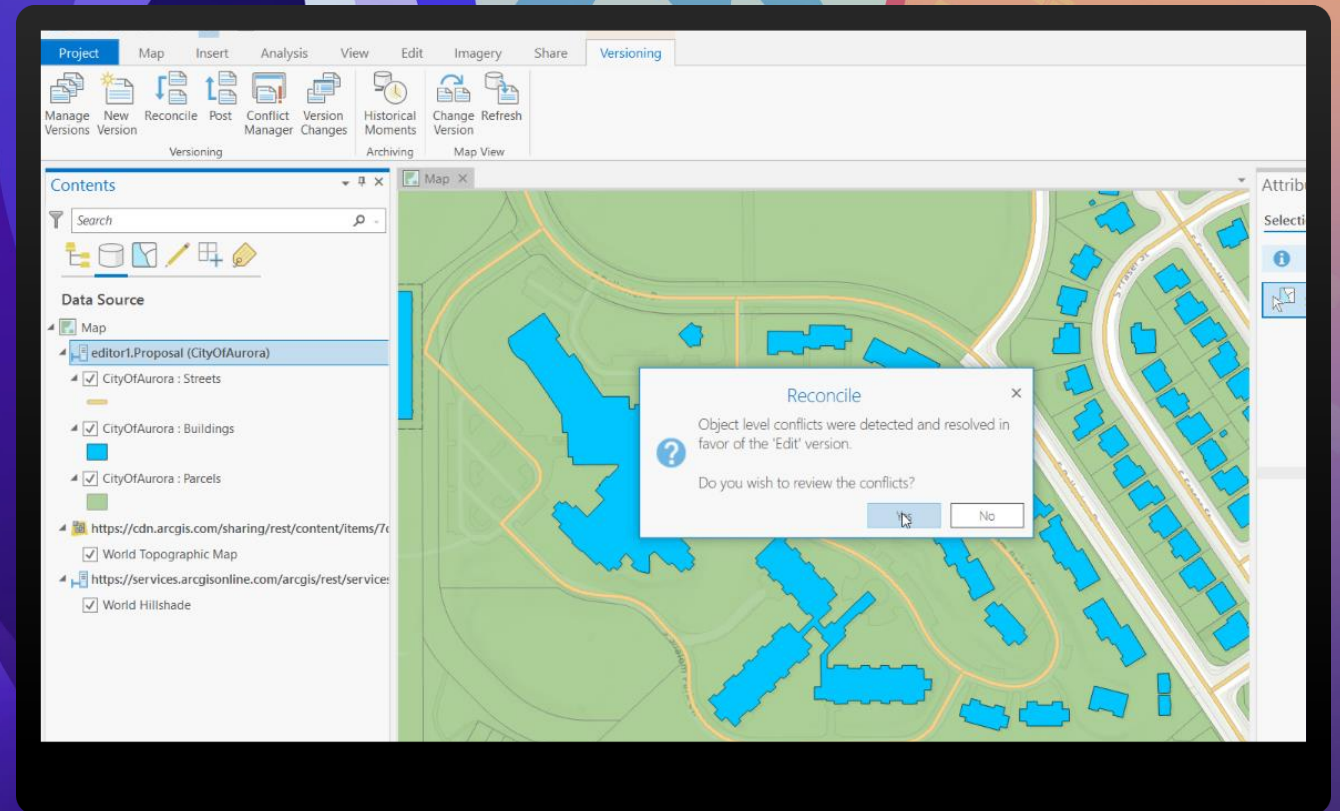
The screenshot shows the 'Conflicts' window in ArcGIS. The left pane displays a tree view of the conflict hierarchy, with 'Update-Delete (1)' selected. The right pane shows a table of attribute conflicts.

Property	Current	Target (sde.DEFAULT)	Common Ancestor
objectid	25	<Deleted>	25
buildingid	N		U.S. Post Office
facilitykey	Esri Redlands		U.S. Post Office
shortname	N		U.S. Post Office
bldgarea	32121.52738523		32121.52738523
accesstype	Employees		Public
condition	Excellent		Excellent
ownedby	Our Agency		Other
maintby	Our Agency		Other
lastupdate	6/14/2011 4:27:01 PM		6/14/2011 4:27:01 PM
lasteditor	Esri		Esri
shortname1			
bldgtype			
globalid	{BEEE4DDE-6FA7-4A62-A9FD-6C1356A039FB}		{BEEE4DDE-6FA7-4A62-A9FD-6C1356A039FB}
shape			



# Editing Workflow

Justin Muise



# Version administration

## Overview

### Administration tasks

- Service-based – portal users
- Version Management capability

### Version access

- Version access property (public / protected / private)
- Portal account privileges

# Version Administrator

Define

## Portal user - Version administrator

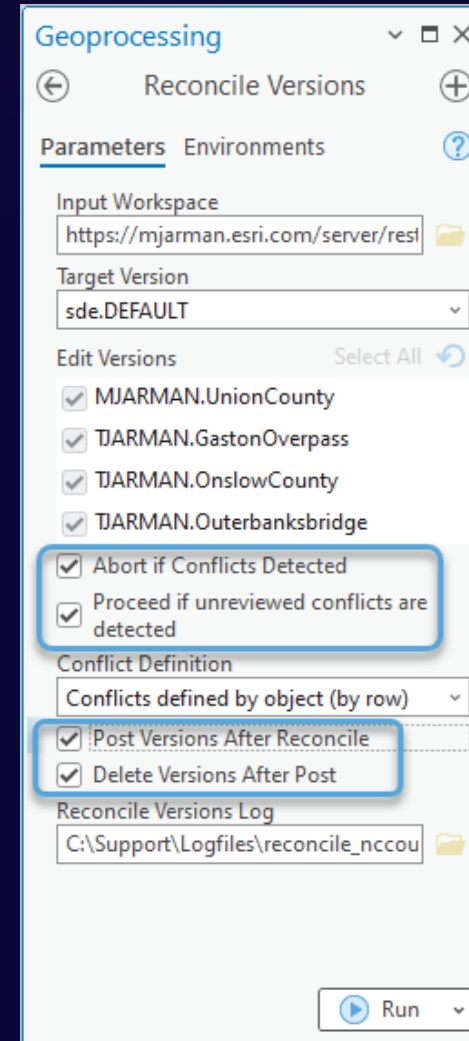
- Publisher / service owner
  - Portal Administrator
  - Custom Role – Manage All
- 
- Tasks reserved for geodatabase administrator
    - Default protected
    - Delete versions with no service



# Version administration workflow

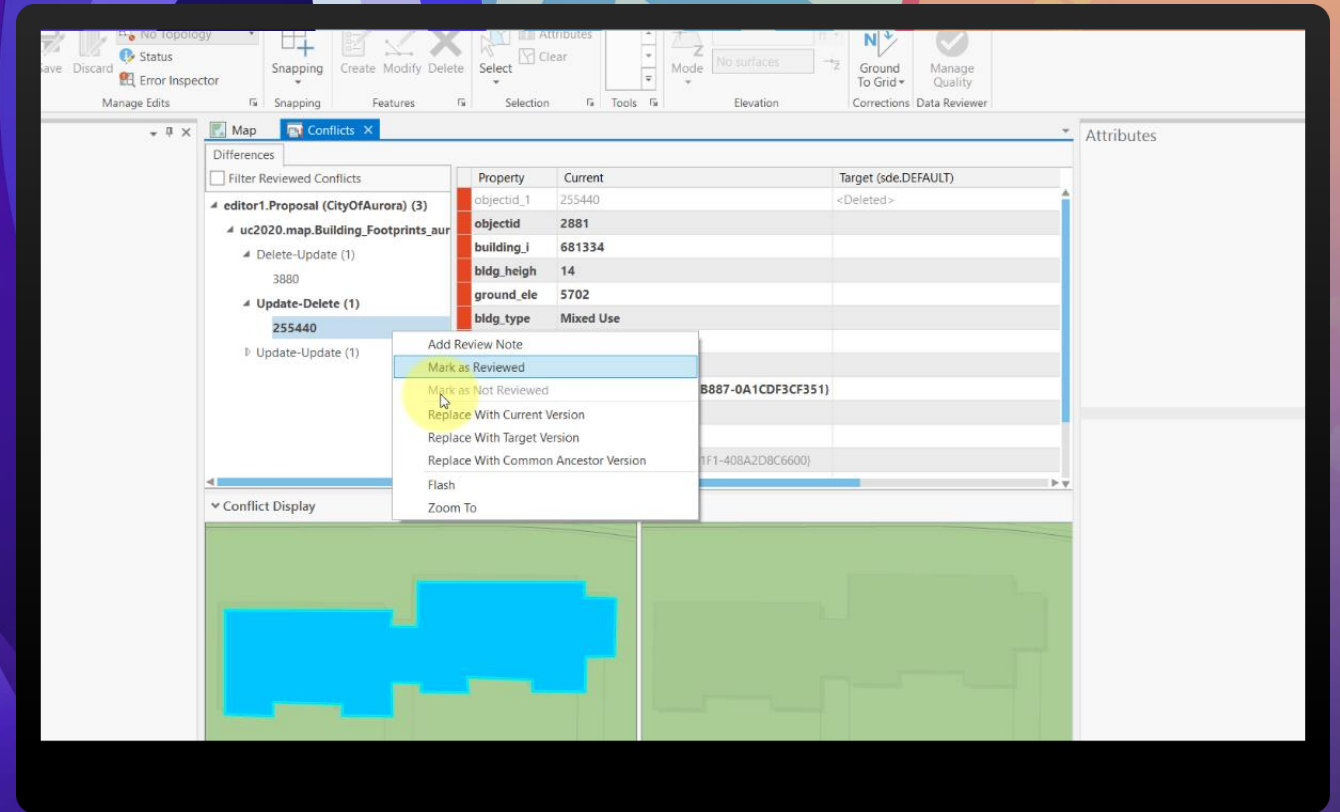
## Example

- Reconcile Versions tool
- Manual process for remaining versions
  - Change versions
  - Inspect and resolve conflicts
  - Reconcile
  - Post to protected default
  - Delete version



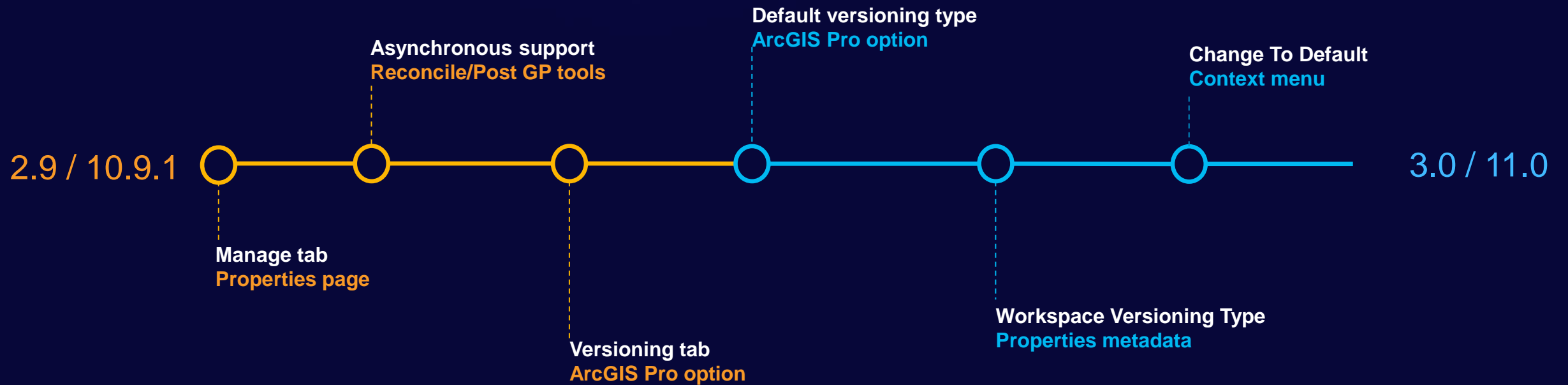
# Version Administration Workflows

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# What's new

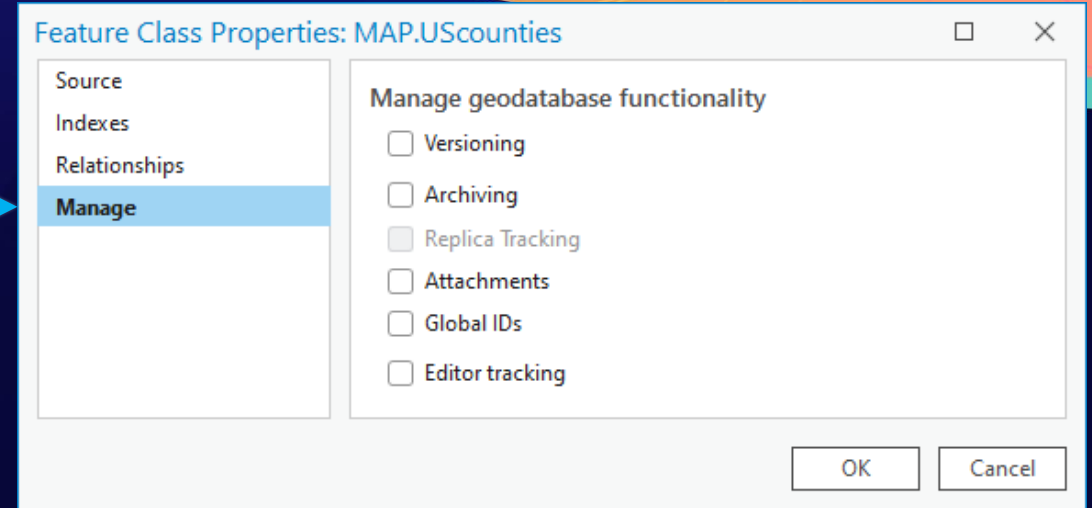
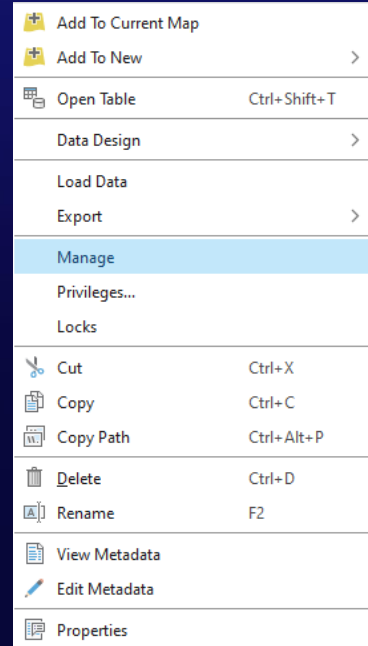
## Branch versioning



NEW

# What's new

## Branch versioning



2.9 / 10.9.1

Asynchronous support  
Reconcile Versions tool

Default versioning type  
ArcGIS Pro option

Change To Default  
Context menu

3.0 / 11.0

Manage tab  
Properties page

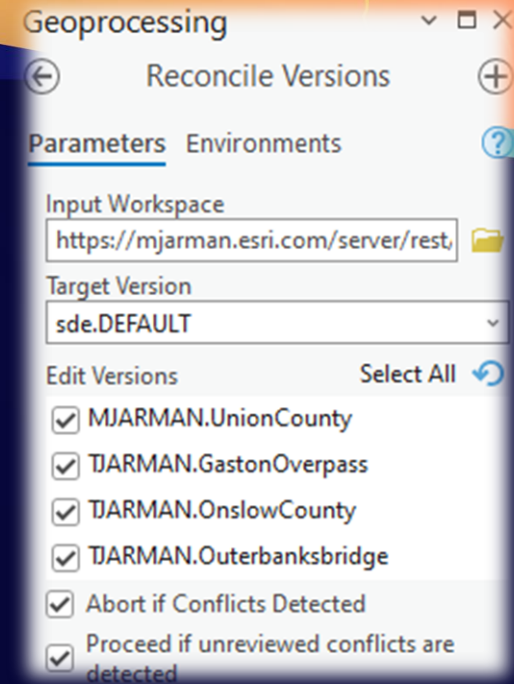
Versioning tab  
ArcGIS Pro option

Workspace Versioning Type  
Properties metadata

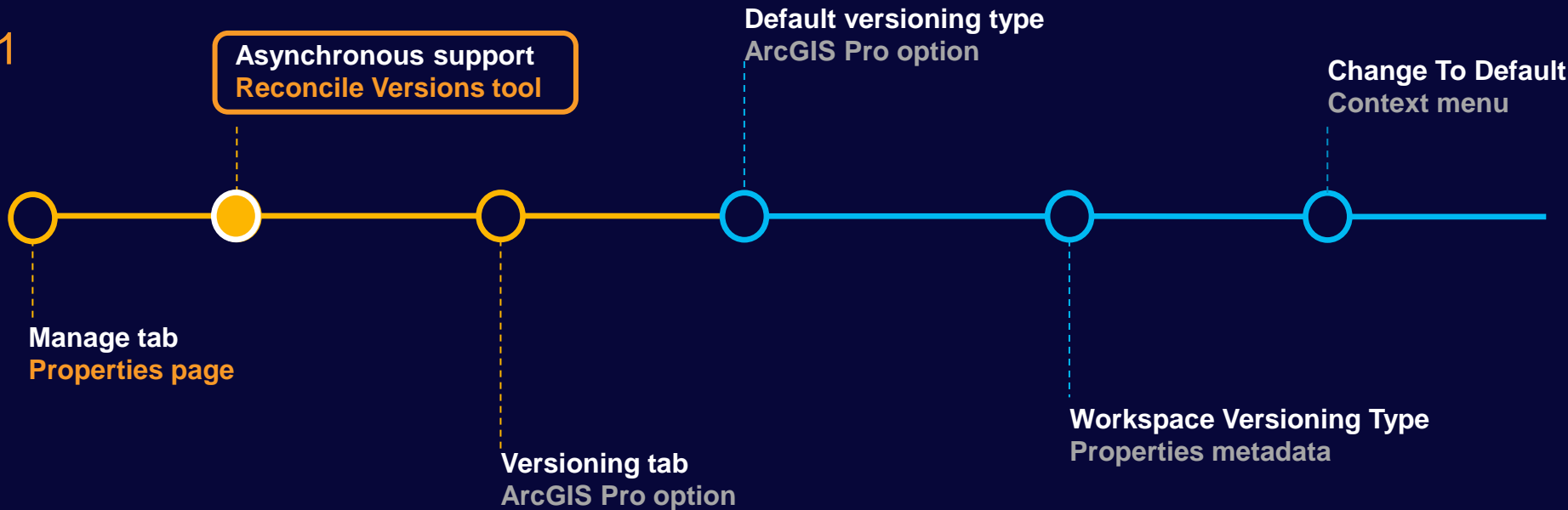
NEW

# What's new

## Branch versioning



2.9 / 10.9.1



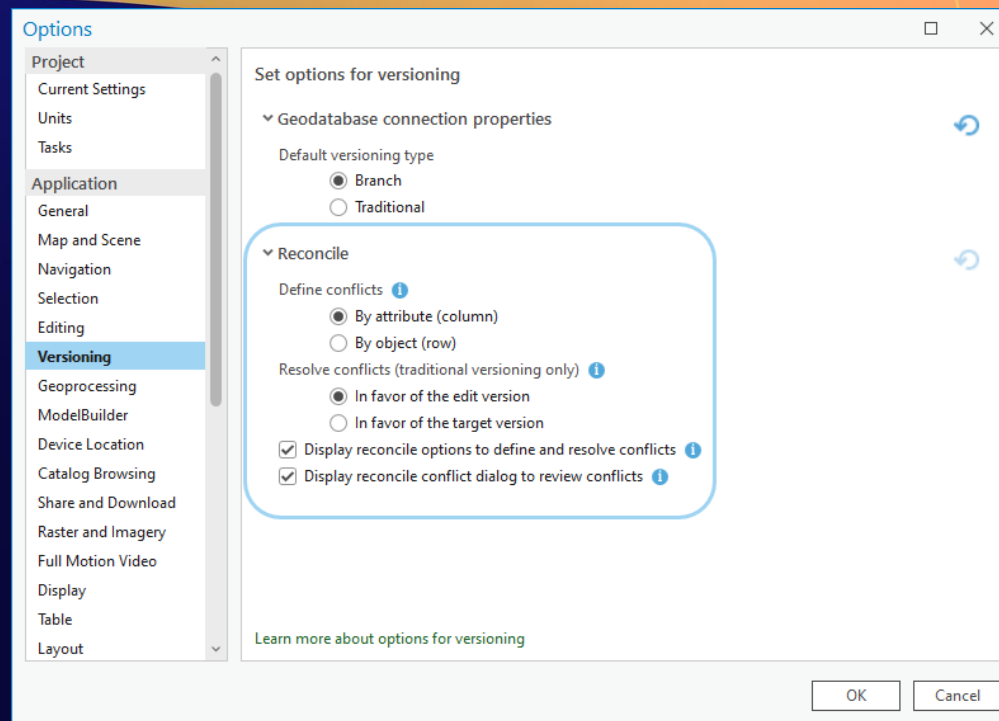
3.0 / 11.0

NEW



# What's new

## Branch versioning



2.9 / 10.9.1

Asynchronous support  
Reconcile Versions tool



Manage tab  
Properties page

Versioning tab  
ArcGIS Pro option

Default versioning type  
ArcGIS Pro option

Workspace Versioning Type  
Properties metadata

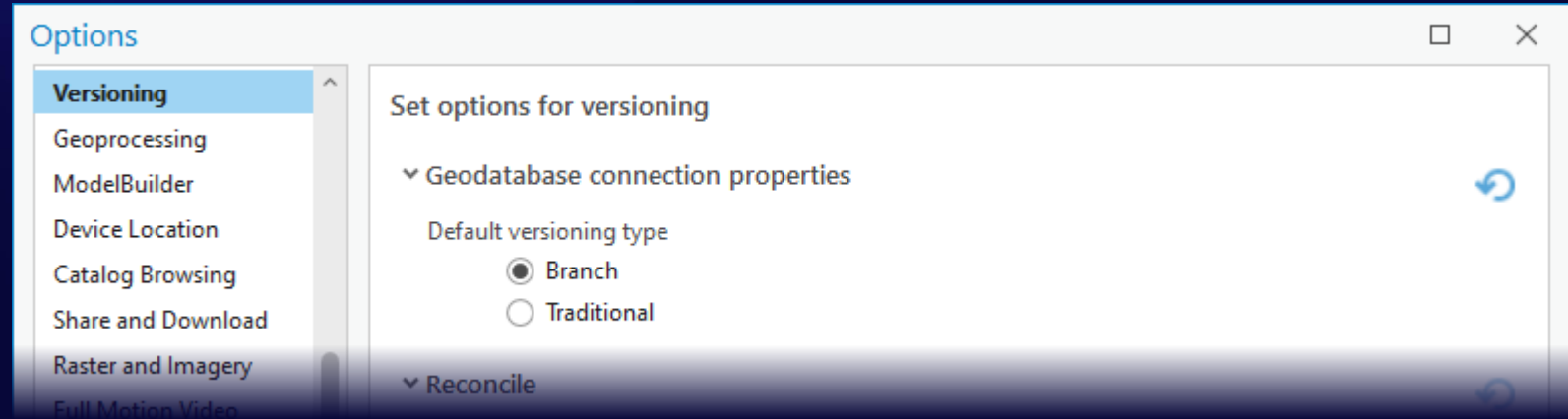
Change To Default  
Context menu

3.0 / 11.0

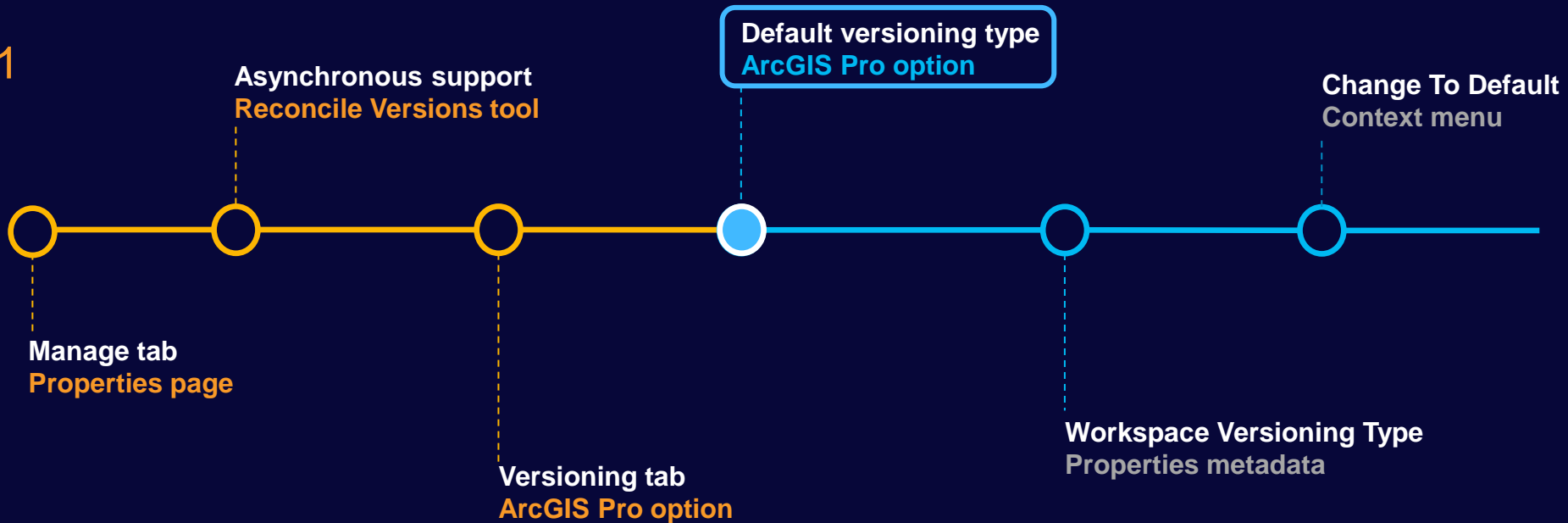
NEW

# What's new

## Branch versioning



2.9 / 10.9.1

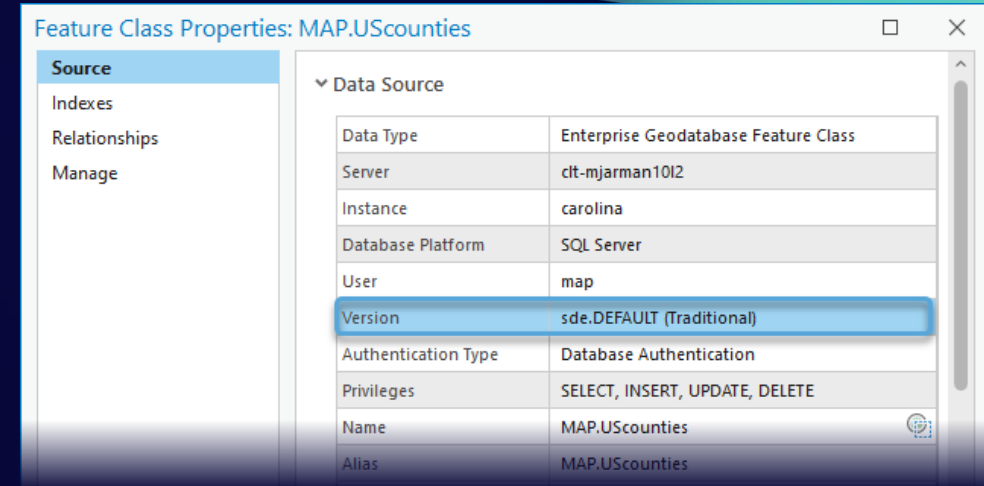
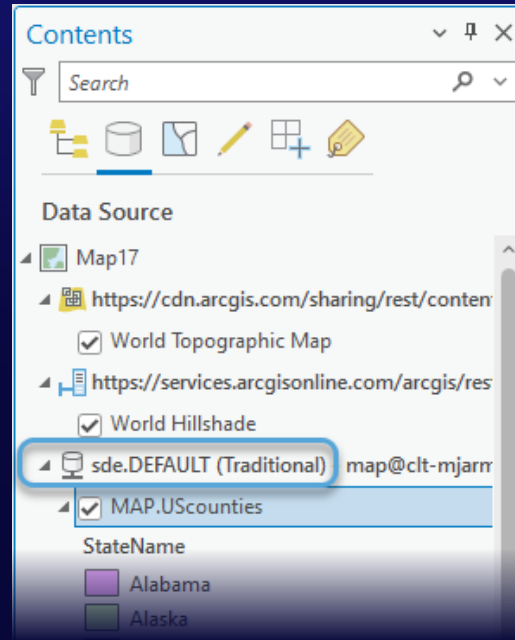


3.0 / 11.0

NEW

# What's new

## Branch versioning



2.9 / 10.9.1

Asynchronous support  
Reconcile Versions tool

Default versioning type  
ArcGIS Pro option

Change To Default  
Context menu

3.0 / 11.0



Manage tab  
Properties page

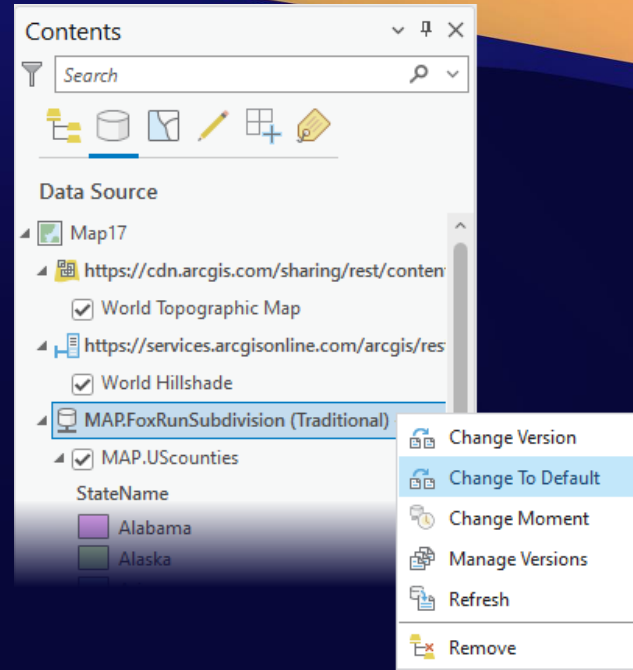
Versioning tab  
ArcGIS Pro option

Workspace Versioning Type  
Properties metadata

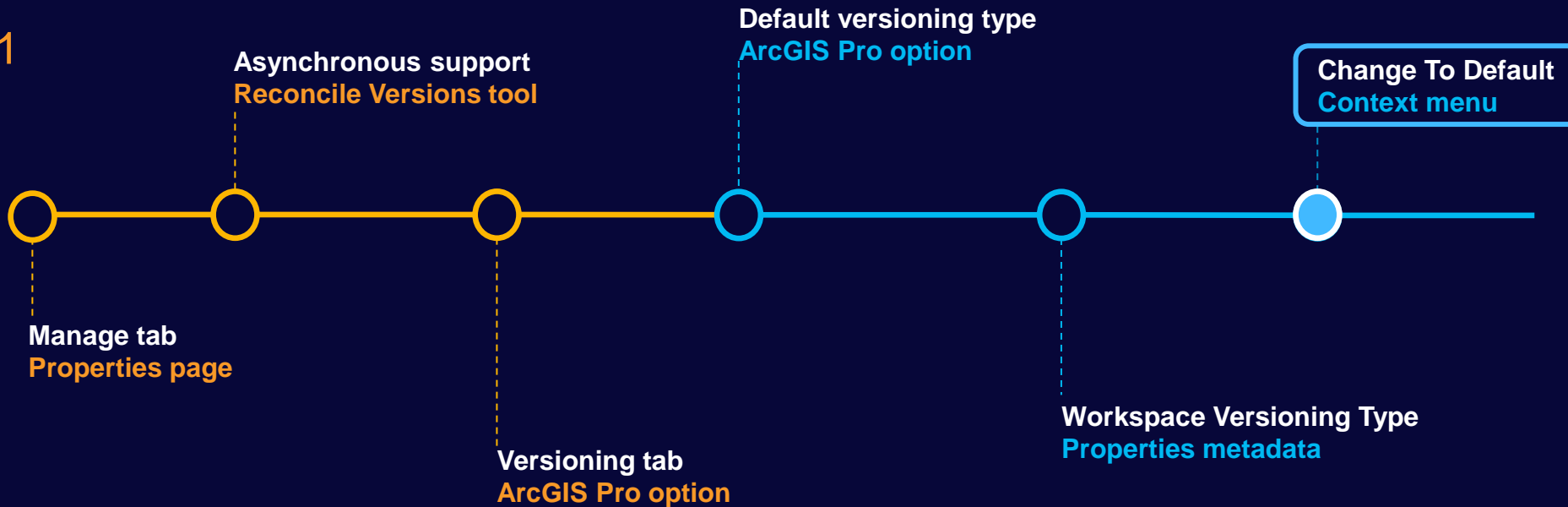
NEW

# What's new

## Branch versioning



2.9 / 10.9.1



3.0 / 11.0

NEW

# Summary

Branch versioning

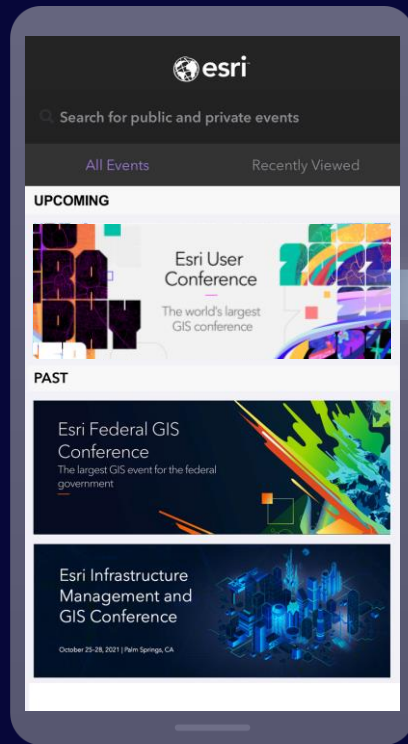
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- Type of versioning
- Service-based architecture
  - Editing and admin
- Simplified administration
- Easy to prepare and publish

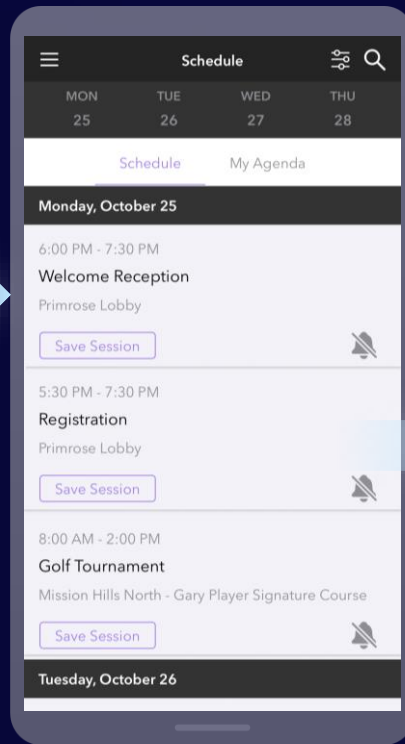


# Please Share Your Feedback in the App

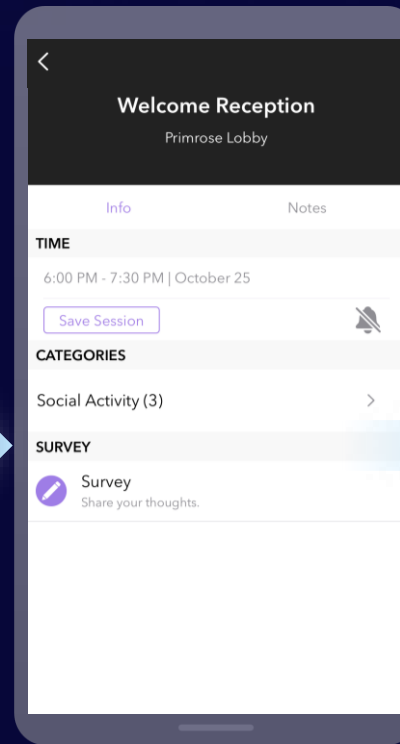
Download the Esri Events app and find your event



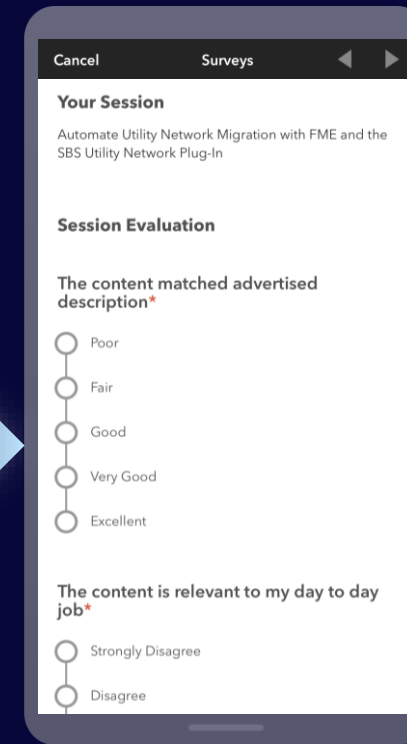
Select the session you attended



Scroll down to "Survey"



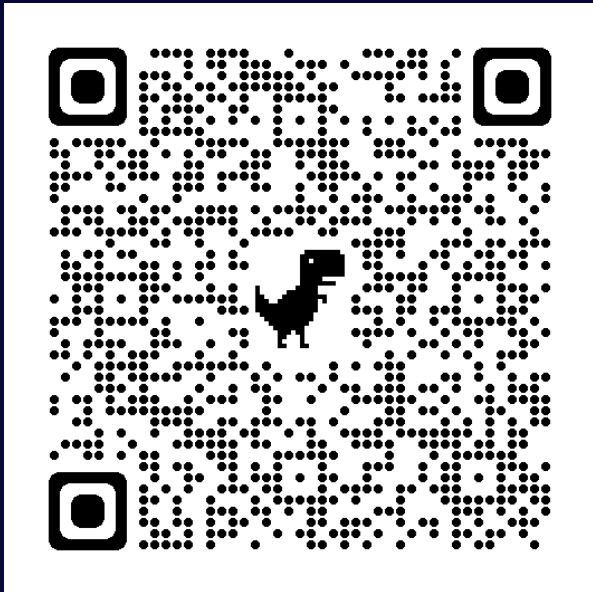
Log in to access the survey



# Related sessions and Resources

## Branch versioning

- Demonstrating Branch Versioning Workflows (Demo Theater)
  - Wednesday 1:15-2:00 PM
- Resources



Questions?



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OF  
WHERE<sup>®</sup>