Synchronizing and Disconnected Editing in Collector

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Topics Covered

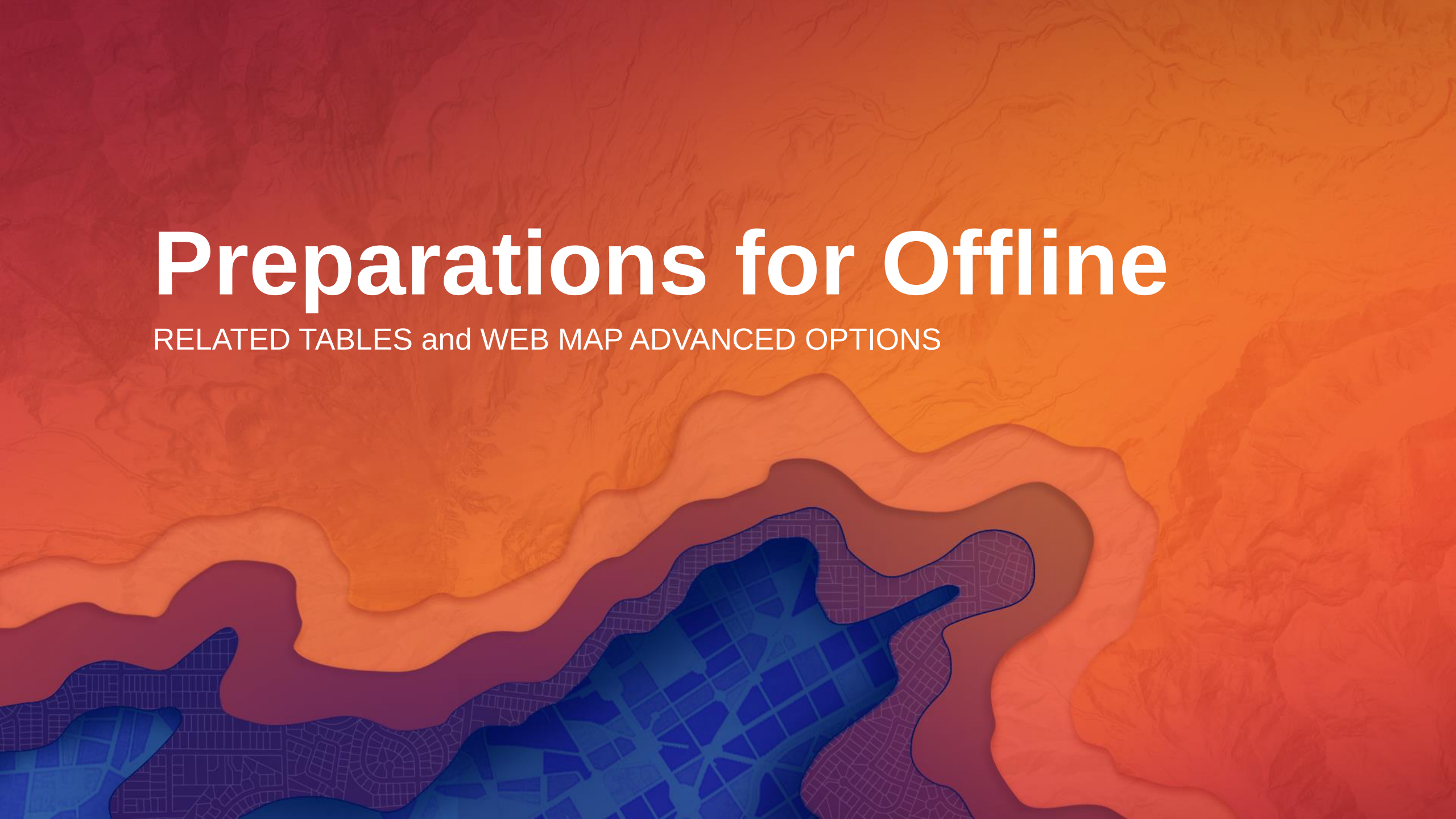
With demonstrations throughout each step

- Application offline functionality
  - *Getting started with the ArcGIS Online offline workflow*
  - *Reviewing Attachments and Related Tables*
  - *Getting started with the ArcGIS Server offline workflow*

- Disconnected Editing
  - How it works – what is happening in the background?
  - Archived vs. Versioned Data

Preparations for Offline

RELATED TABLES and WEB MAP ADVANCED OPTIONS



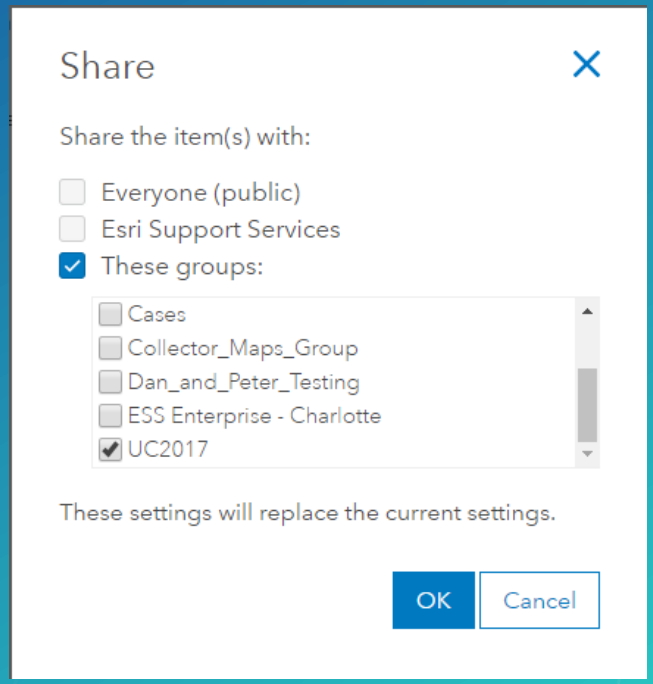
Collector for ArcGIS

“Mobile application that allows you to collect and update information in the field, whether connected or disconnected”

Collector uses Web Maps

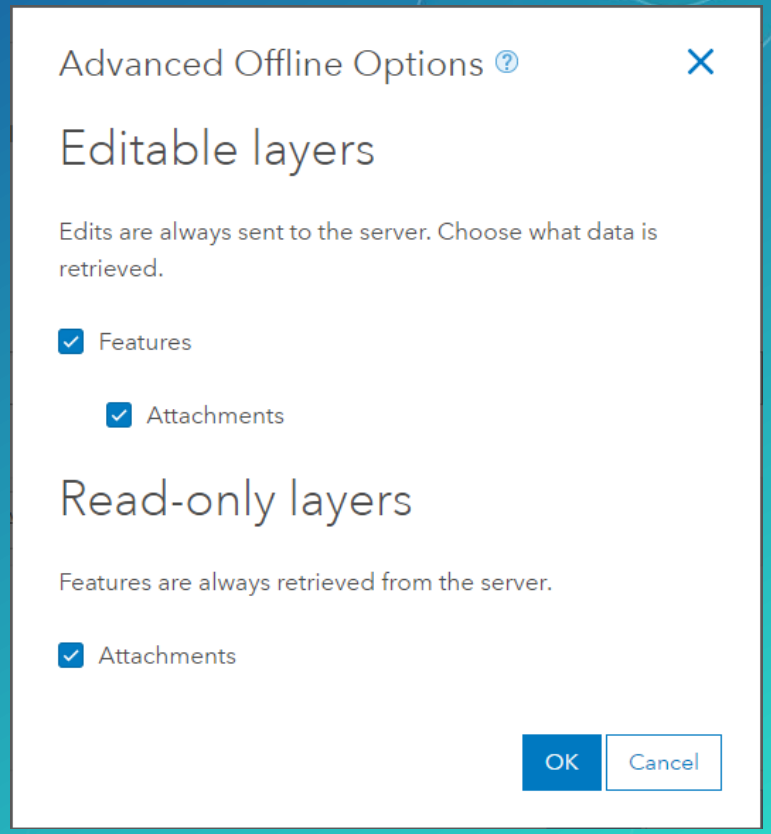
- Collector uses web maps that include:
  - Portal/ArcGIS Online web map
  - Layers from 1+ feature services (editable)
  - Location Tracking layer (optional)
  - Basemap
  - Application settings

- Share Maps to field workers using Groups:
  - Create Named Users for each field worker
  - Invite field workers to groups
  - Share maps into groups



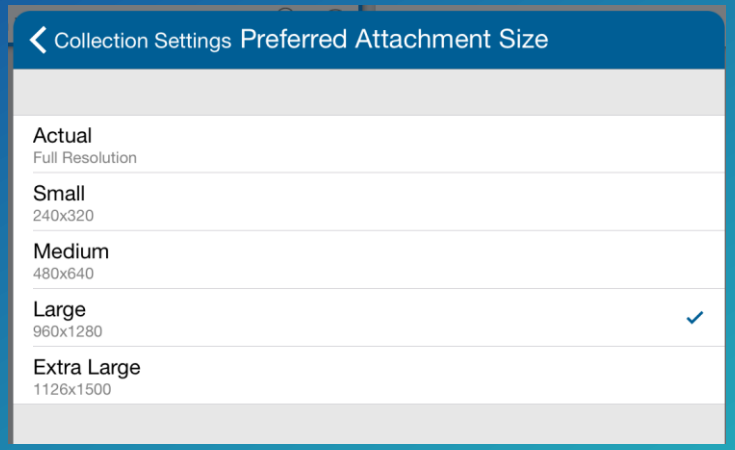
Web Map Considerations

- Advanced Offline Options
  - Editable layers are hosted or from AGS 10.4
  - Edits are always sent back to the server regardless
- Features
  - Leave features checked to see all features
  - Uncheck features when existing features are not needed
- Attachments
  - If users need to see attachments then leave checked
  - Uncheck when users do not need to see attachments
- Read-only Layers
  - Features in read-only layers are always retrieved.
  - Reduce data size and download cost if unchecked



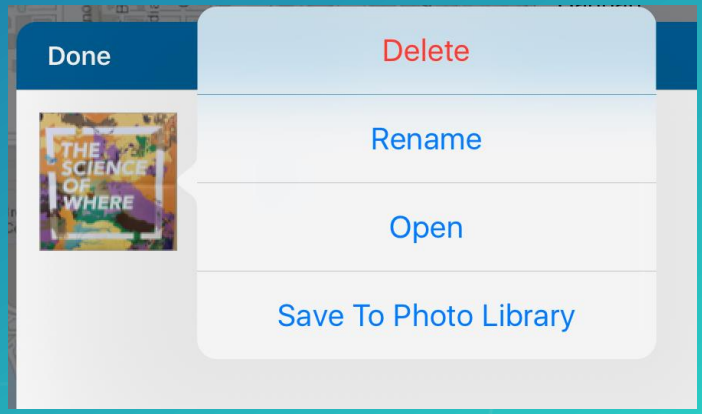
Attachments

- Available for offline editing as well
- Attachments can be taken at time of collection or added from a gallery
- The preferred attachment size can be chosen in the Collector settings



Related Tables

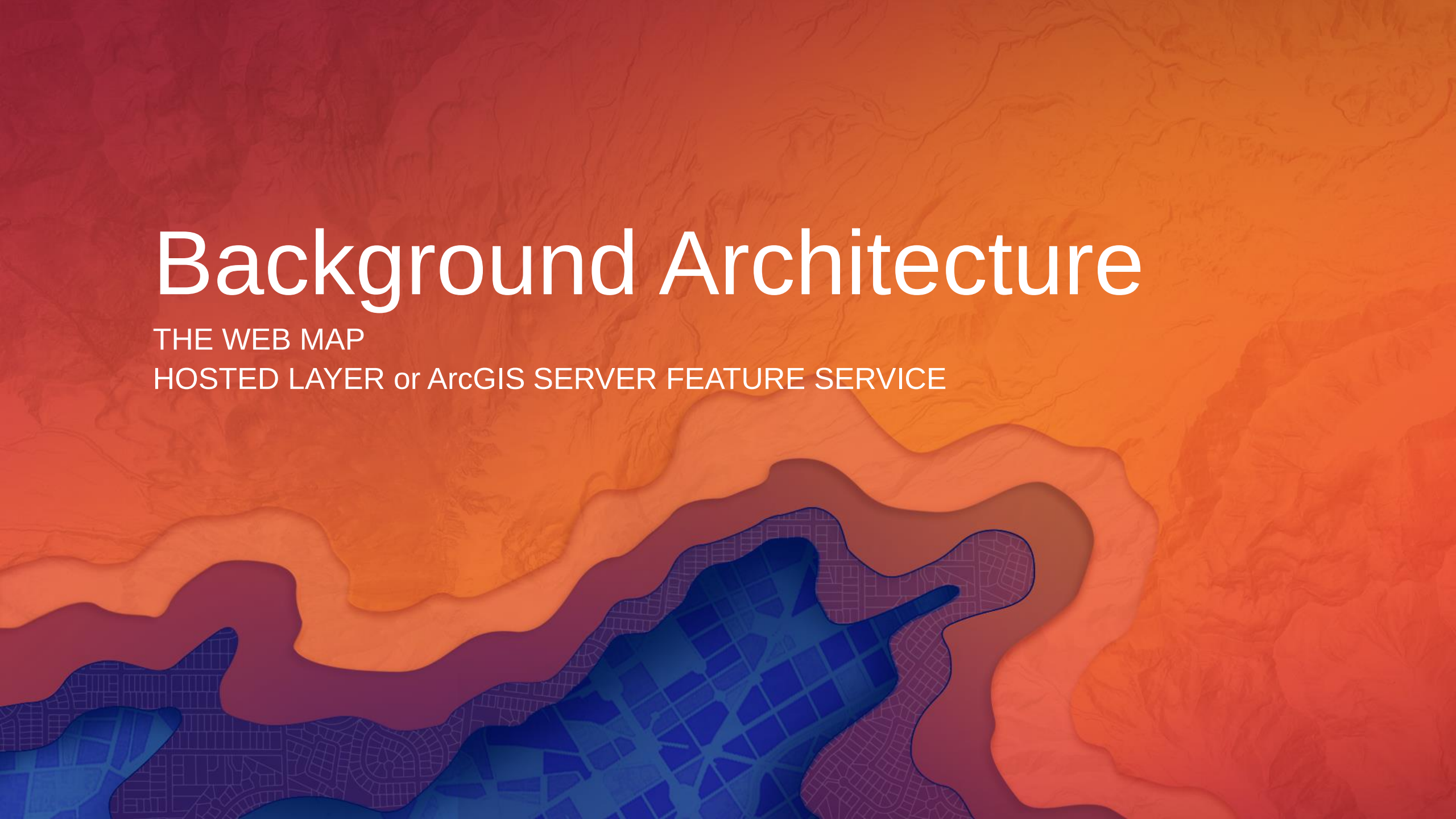
- Supported with connected or disconnected editing
- Each table or child layer in relationship can have attachments as well



Background Architecture

THE WEB MAP

HOSTED LAYER or ArcGIS SERVER FEATURE SERVICE



Feature Services: Hosted or ArcGIS Server

Hosted Feature Services

(on ArcGIS Online or Portal for ArcGIS)

- Publish data directly and it copies to the cloud (organization)
- This is a separate copy of the data
- You can download the data at a later point and import/append to your databases
- Administer service properties in the Organization

ArcGIS® Server

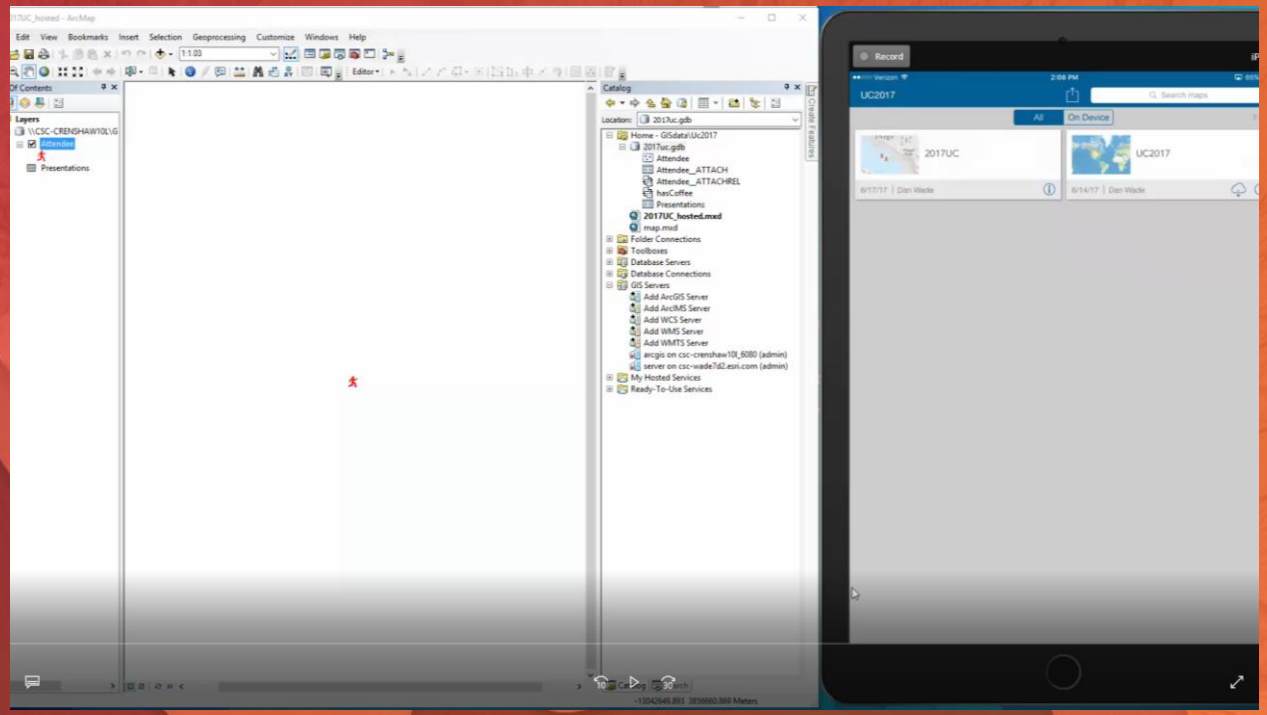
Enterprise Database

- Feature Service references data in your enterprise database (Microsoft SQL Server, Oracle, PostgreSQL, etc.)
- Allows you to work with versioned or archived data
- Collector edits automatically pass back to your database
- Administer service properties in ArcGIS Server Manager

Disconnected Editing

What is it?

- Without this Internet connection we have the capability to download the Web map to work offline in the Collector for ArcGIS app.
- For Basemap options we can choose to download the Esri basemaps, your own custom basemaps, or a .tpk side-loaded onto the device
- When connected, sync your edits with the Sync button



Collector for ArcGIS on ArcGIS Online disconnected (offline)

Demonstration 1

Go offline

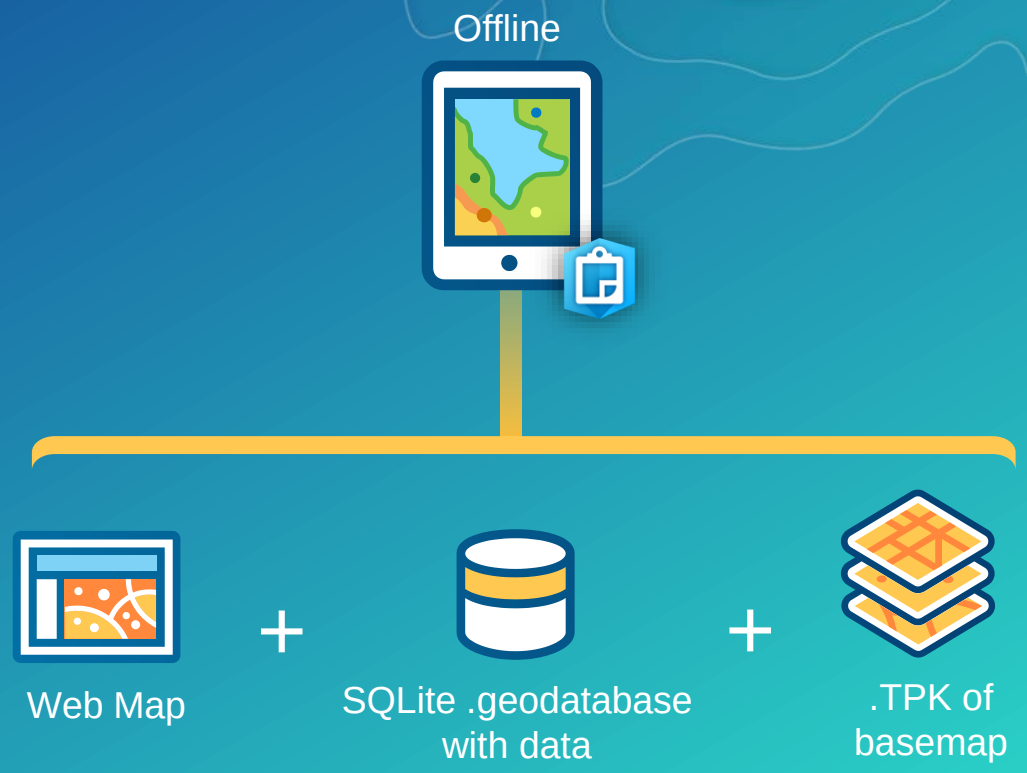
Disconnected Editing

Offline Maps User Workflow

Disconnected Editing

What is actually happening?

- To work offline, Collector for ArcGIS needs the web map, a tile package, and a .geodatabase extension SQLite database containing the data
- Feature services taken offline *must* have the “Sync” capability enabled

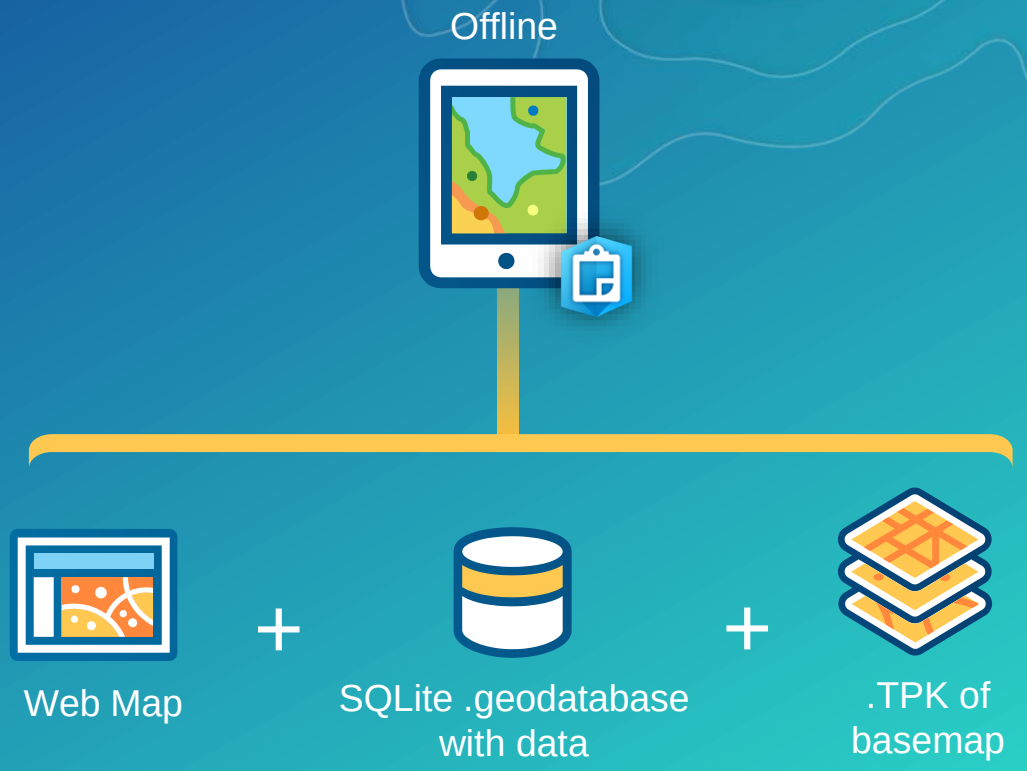


Disconnected Editing

What happens when you click “Download”?

- When you click “Download”, client saves a .TPK, .geodatabase, and saves the webmap JSON all for offline use

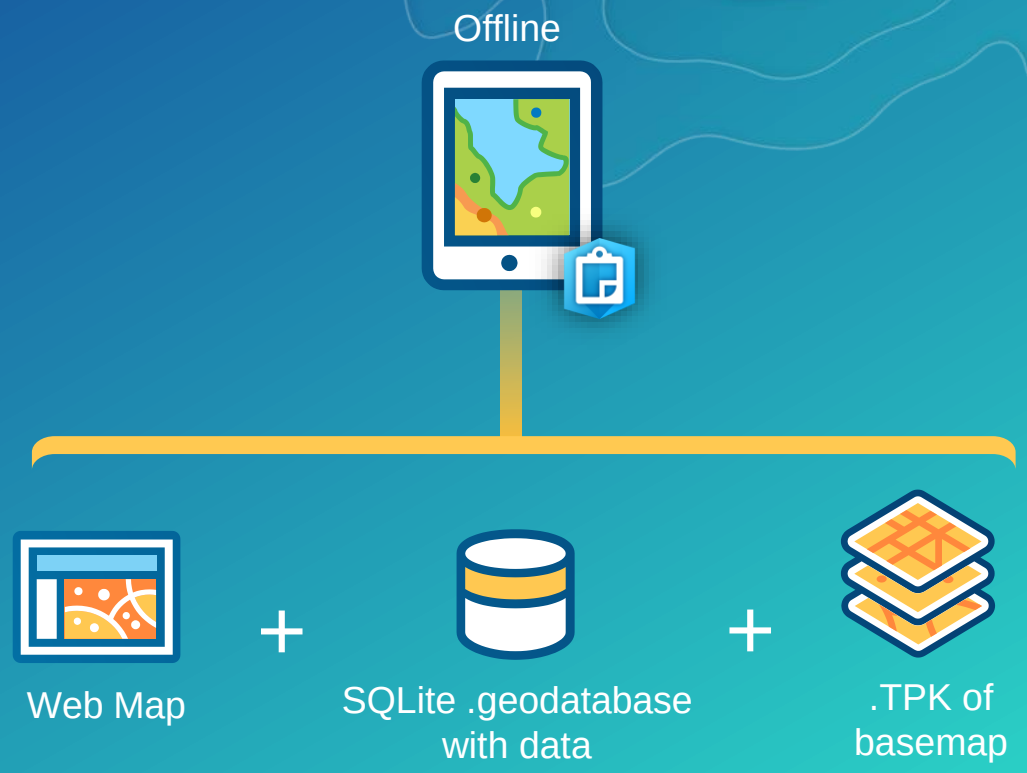
- CreateReplica request
- ExportTiles request



Disconnected Editing

What happens when you click “Sync”?

- Uploading the collected data
- Synchronizing of the changes made in the data
- Downloading of the delta geodatabases to the mobile device



If Sync Fails?

- Reducing attachment size
- Checking the integrity of the data
- “Push only” editing
- Only download what is necessary
- Utilize Advanced Offline Options
- Only synchronize on a strong connection
- Review Server logs
- Try a different internet connection
- Work with the DBA

Versioned or Archived Data?

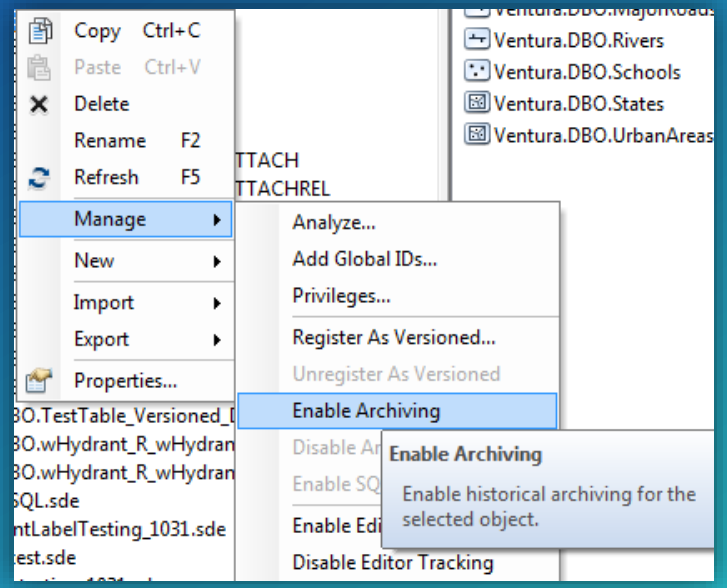
When publishing feature services to ArcGIS Server, enable Sync capability.

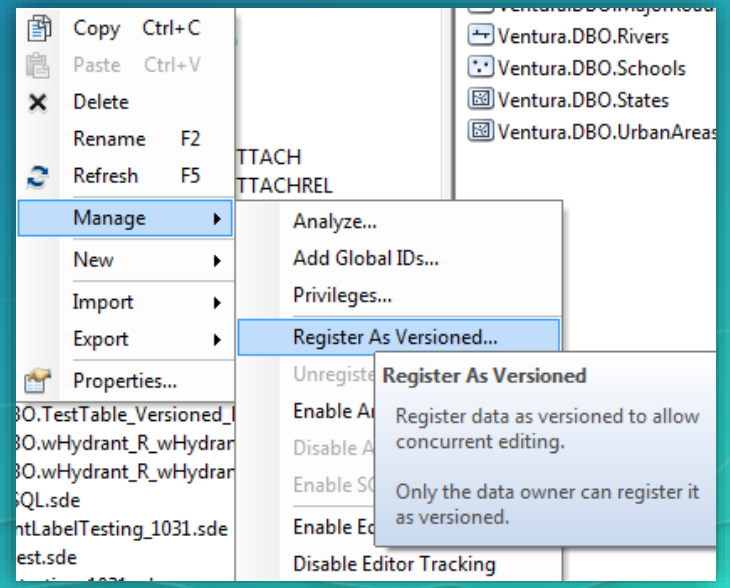
Archived Data

- Less oversight required – no back-office processes
- Historical record of object creation and changes

Versioned Data

- Allows replication, editing geometric networks, working with complex data
- Requires reconciling and posting





Offline with archived data

- Geodatabase Archiving is the mechanism for capturing, managing, and analyzing data change

- Workflow:

  1) Enable Archiving and GlobalIDs on the datasets

  2) Publish the feature service with sync enabled

  3) Go offline, make edits, sync – that's it!

  The data will be available in the feature class

- Each feature has the time at which it was last modified recorded, and the dates of which features are current

(Hidden) fields added to table when archiving is enabled

	GDB_ARCHIVE_OID
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12

+

GDB_FROM_DATE	GDB_TO_DATE
2016-04-18 11:54:21.0000000	9999-12-31 23:59:59.0000000
2016-04-18 11:54:21.0000000	9999-12-31 23:59:59.0000000
2016-04-18 11:54:21.0000000	9999-12-31 23:59:59.0000000
2016-04-18 11:54:21.0000000	9999-12-31 23:59:59.0000000
2016-04-18 11:54:21.0000000	9999-12-31 23:59:59.0000000
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2016-04-18 11:54:21.0000000	9999-12-31 23:59:59.0000000
2016-04-18 11:54:21.0000000	9999-12-31 23:59:59.0000000

Offline with versioned data

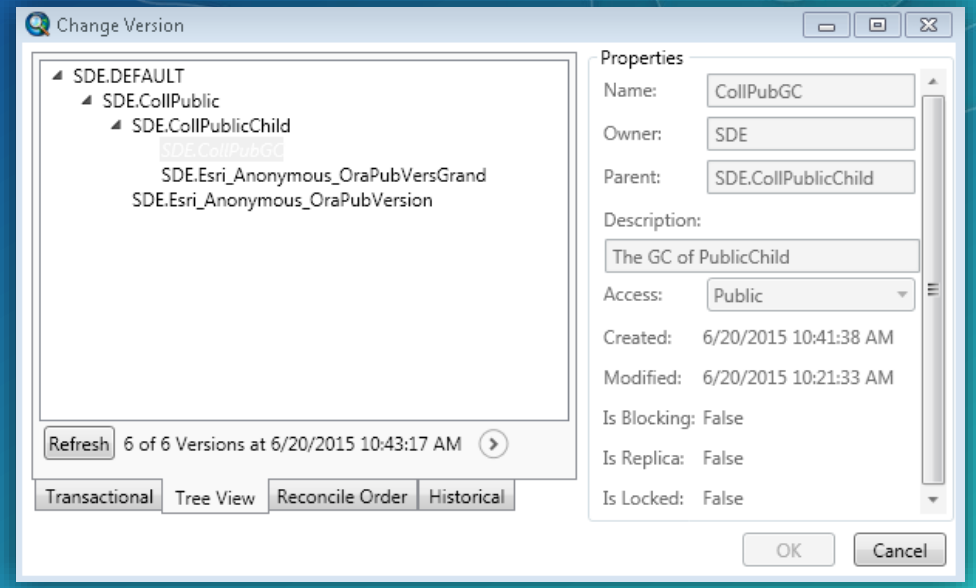
- Geodatabase versioning allows isolation of edits and changes
- Workflow:

  1) Enable Versioning and GlobalIDs on the datasets

  2) Publish the feature service with sync enabled and specify versions per user or per map

  3) Go offline, make edits, sync

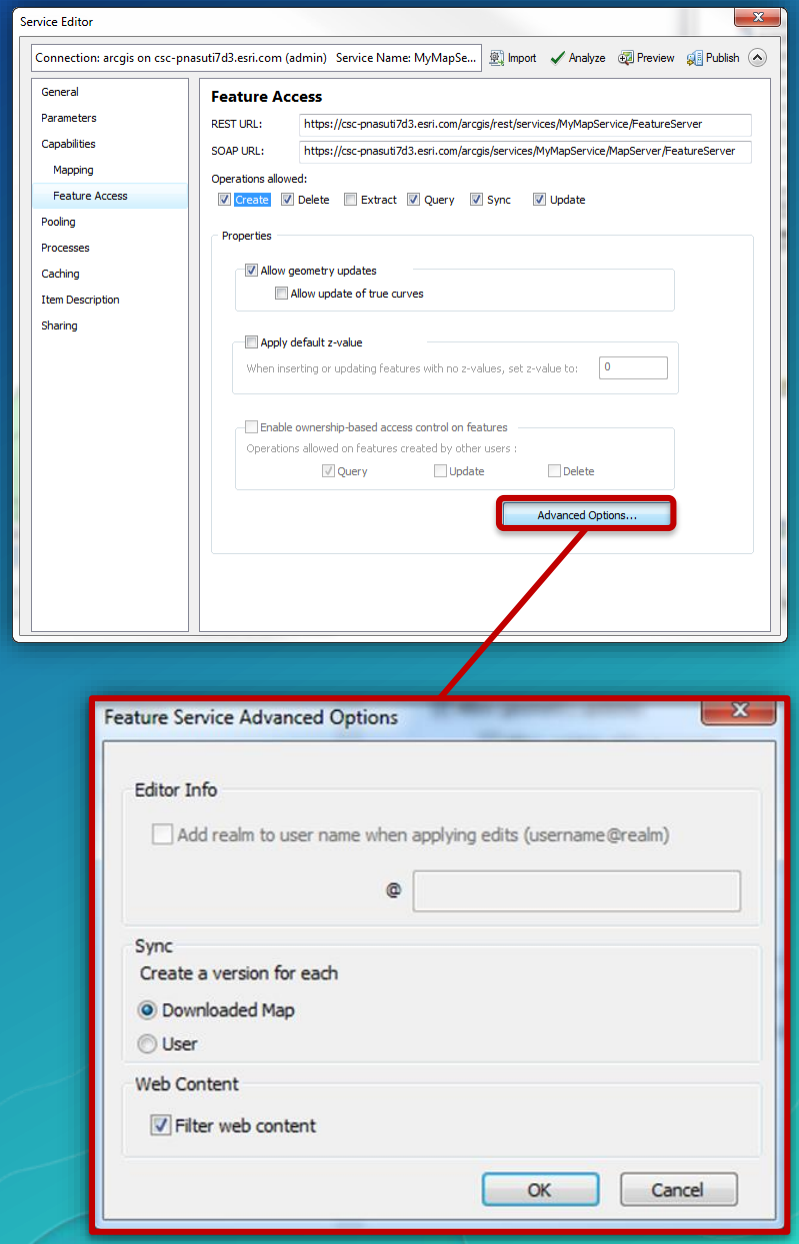
  4) Reconcile and post in the geodatabase



- This reconcile and post workflow requires additional steps for the data to appear in the version to which the feature service is pointing for this feature class
- This reconcile and post workflow would need to be incorporated into existing geodatabase administration workflows

Feature Service Sync Settings

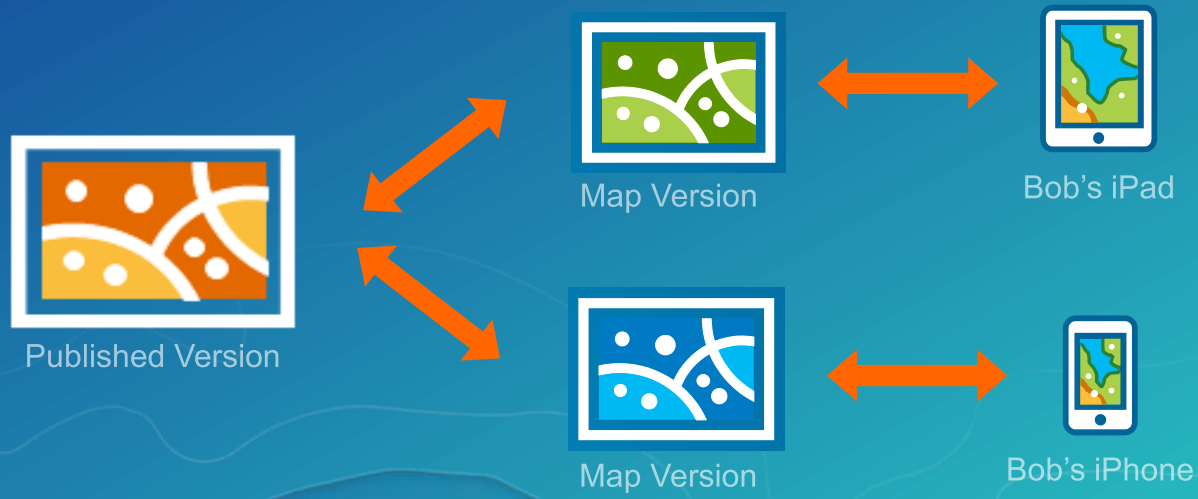
- Create a version for each:
  - Downloaded Map
  - User
- This setting is accessed from the Service Editor in ArcMap when publishing the service



Create a version for each offline map

- A new version is made every time a map with an editable feature service is taken offline, per device
- Version name uses the following syntax:

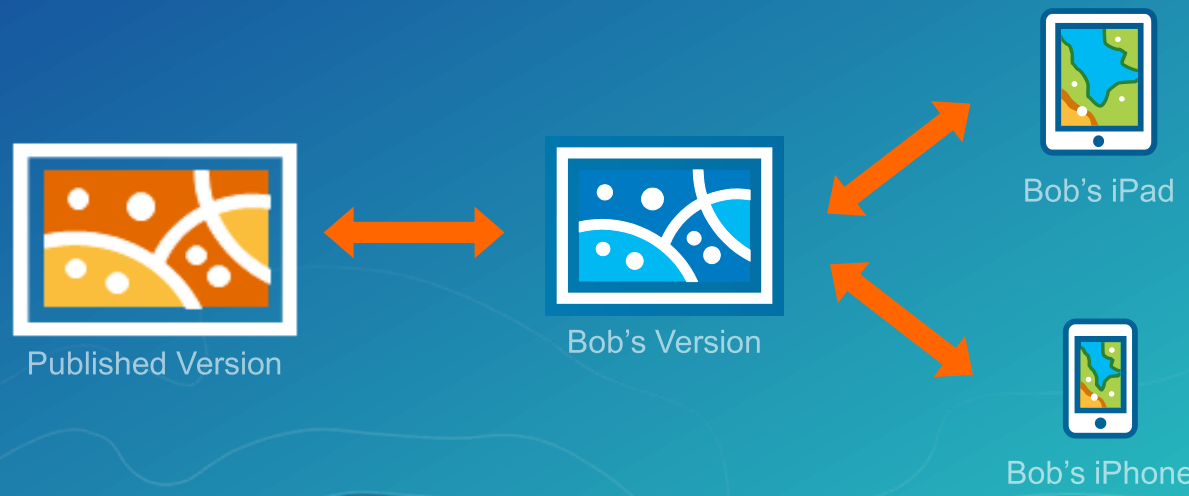
<Name of User who Downloads the Map>_<Name of Feature Service>_< Unique ID>



Create a version for each user

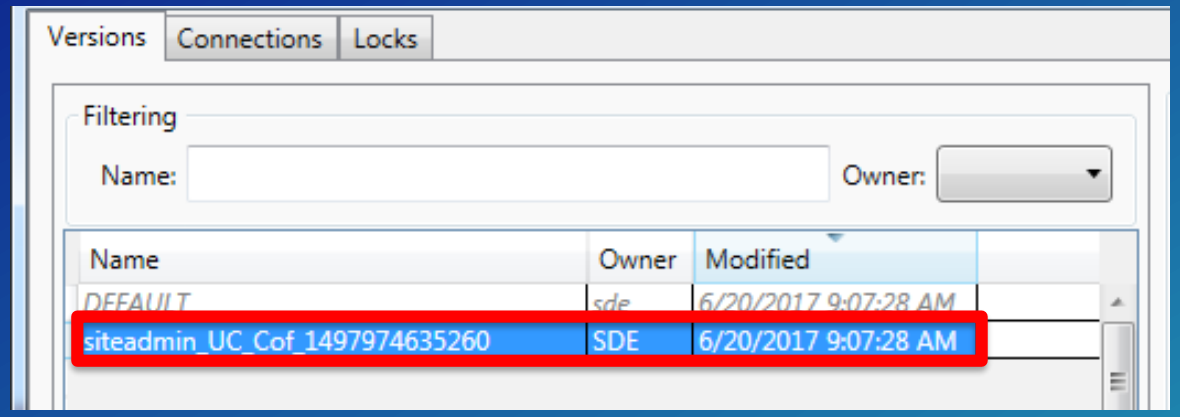
- A new version is generated for each user that downloads a map containing an editable feature service
  - If five users download a map each on their own device, five versions are generated
- Version name uses the following syntax:

  <Name of User who Downloads the Map>_<Name of Feature Service>

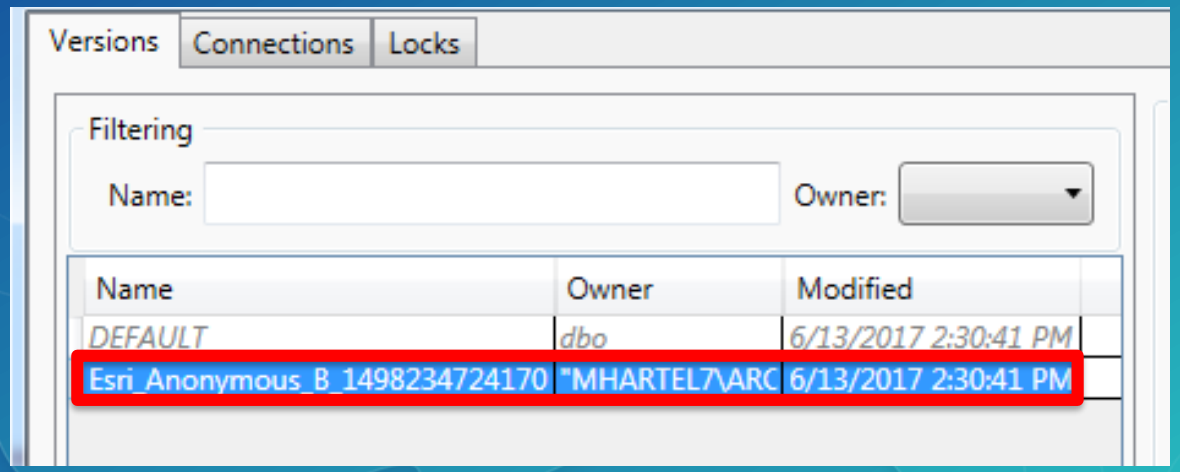


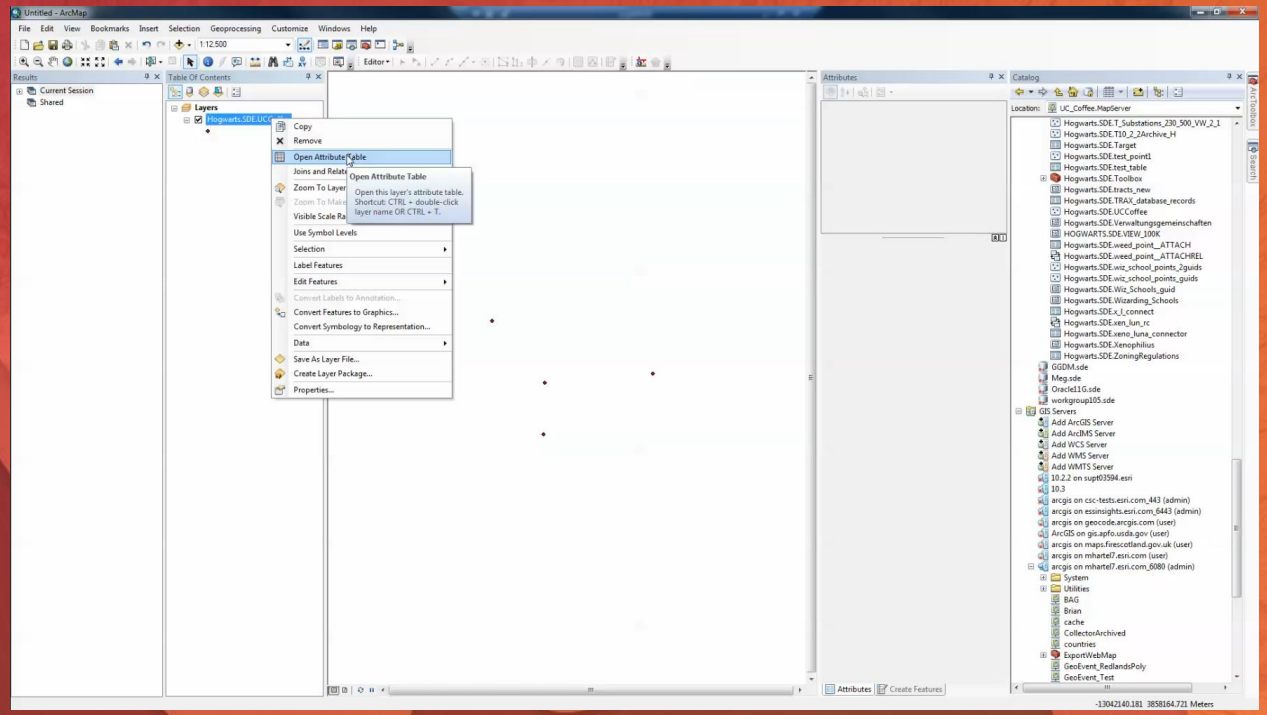
Version naming considerations

The version name in the database that is created reflects the username that is accessing the service



If the service is unsecured, the version will show “Esri_Anonymous”





Disconnected Editing

Demonstration 2

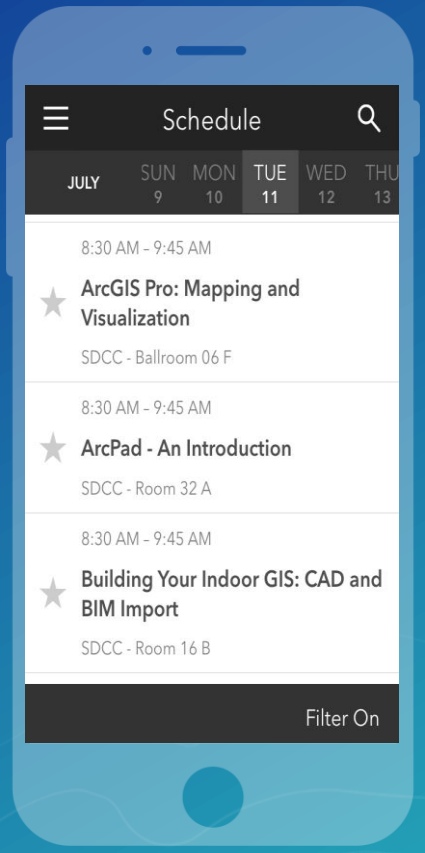
Questions?


esri
THE
SCIENCE
OF
WHERE

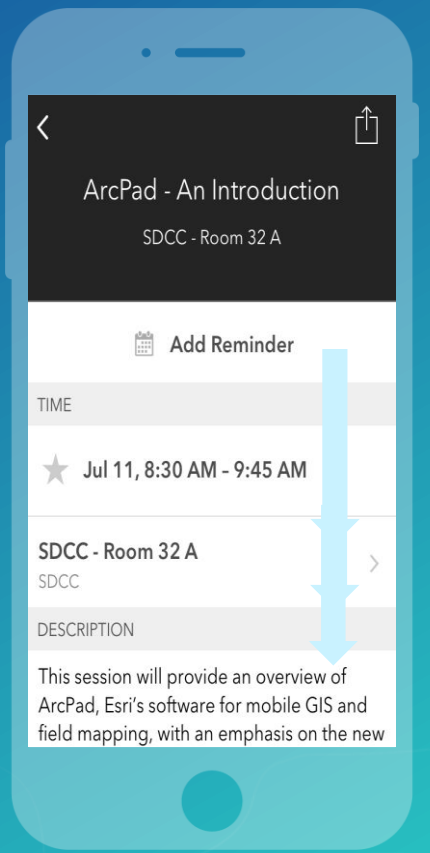
Please Take Our Survey on the **Esri Events App!**

Download the Esri Events app and find your event

Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"