

# Field Data Collection: Collector

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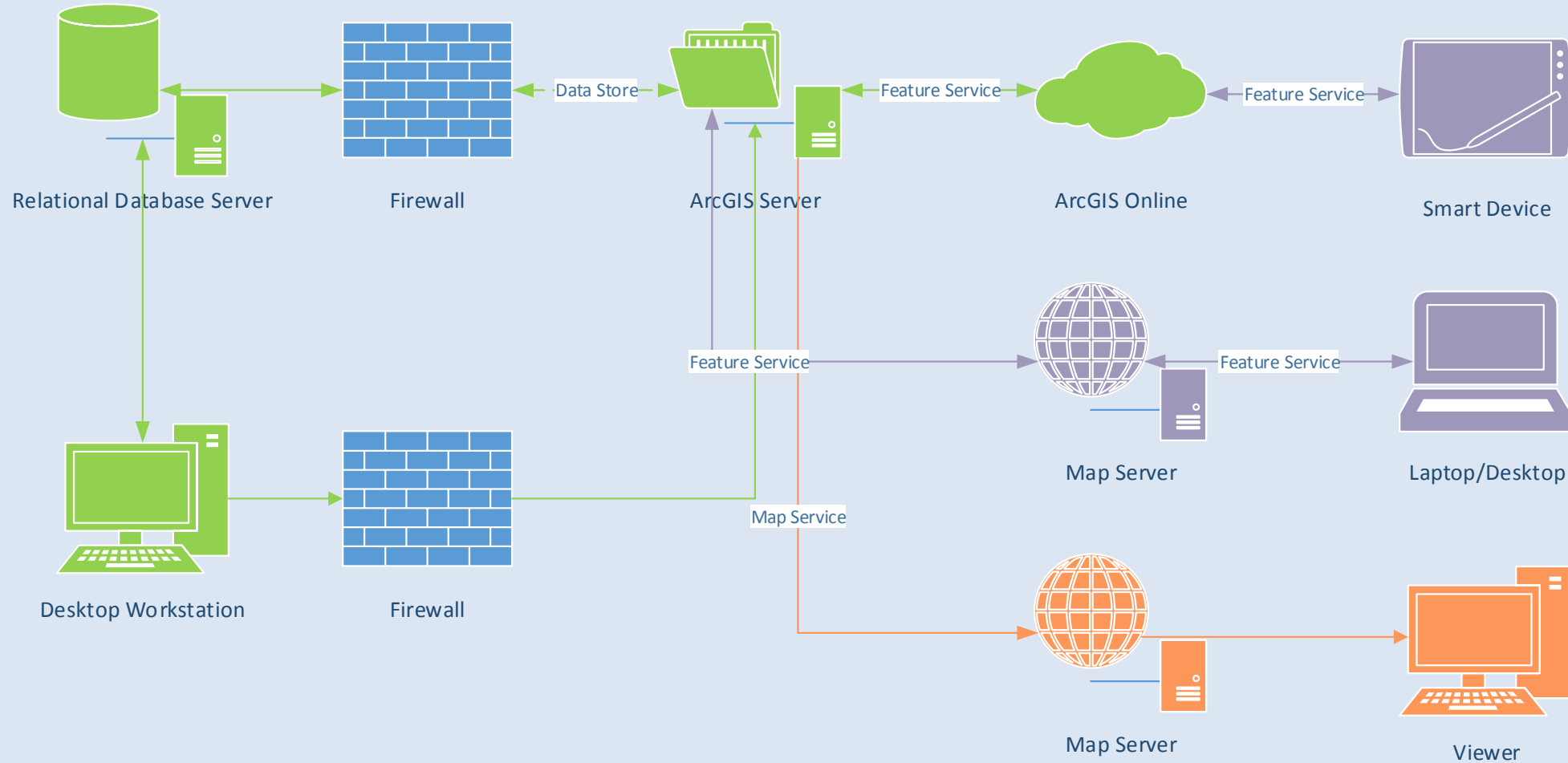


Based upon work supported by the National Science Foundation under Grant DUE ATE 1304591. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

# Field Data Collection

- There are multiple solutions to collecting of data in the field, this presentation will examine a single example.
- Esri Collector will be used, there are Open Source options (EpiCollect) for field data collection.
- You must have an ArcGIS Online Account to use Collector or Esri Portal. While the App is free to download on an Android or Apple device.
- This solution does not require any equipment beyond a smart device (phone or tablet) for data collection.

# Enterprise Network



# Enterprise Network –

## Technician/Designer Side (Green Items)

- A Relational Database (DB) Server is required so that we can have multiple simultaneous editors. DB Server **should** always be placed behind a firewall and have a private IP address. An understanding of the differences between a feature service and map service is required. A relational DB is required to create a feature service.
- The designer workstation is normally behind the firewall but could be in public space, but caution should be taken if placed in public space. I strongly suggested to connect to the desktop computer through a VPN.
- The ArcGIS Server can be a physical or virtual box and should have a public IP and must have web capabilities such as Apache or Microsoft Internet Information Server (IIS). We are a Microsoft shop so therefore we use IIS.
- ArcGIS Online is an external connection in the cloud, ArcGIS Portal could also be used as a local option instead.
- Note: Blue items would be developed and maintained by the IT department, they are communication technologies and not functional components.

# Enterprise Network – Field Data Collector (Purple Items)

- A Smart Device such as a tablet or phone (Apple or Android) can be used to collect field data using the built-in GPS and the camera feature. Note not all tablets have a true GPS, which is needed for accurate positioning. Users must recognize the resolution differences between a smart device and a professional grade GPS. Window based phones and tablets do not have a version of the Collector App, but they could use the web interface, listed in the diagram as the Laptop/Desktop.
- The Map Server can be used to edit the **feature data** set through a web interface. This needs to be secure and not a general population site since data can be modified, therefore a specific login should be required.

# Enterprise Network – General Public (Orange)

- The Map Server will utilize the map service, not the feature service so that this is only a viewable stream and not editable.
- The Viewer can be a desktop, laptop or smart device.

# Other Solutions

- While not everyone will have an enterprise solution available to them; including an ArcGIS Server and a relational database (required for feature class creation, which is required for Collector).
- Therefore, users which have ArcMap Desktop, can create a solution by building it on their desktop and then sharing it as a feature class service via ArcGIS Online. The data will reside in ArcGIS Online and not on a local server, which can raise security concerns, but might actually be more secure.
- For those without ArcMap on their desktop everything can be created in ArcGIS Online.

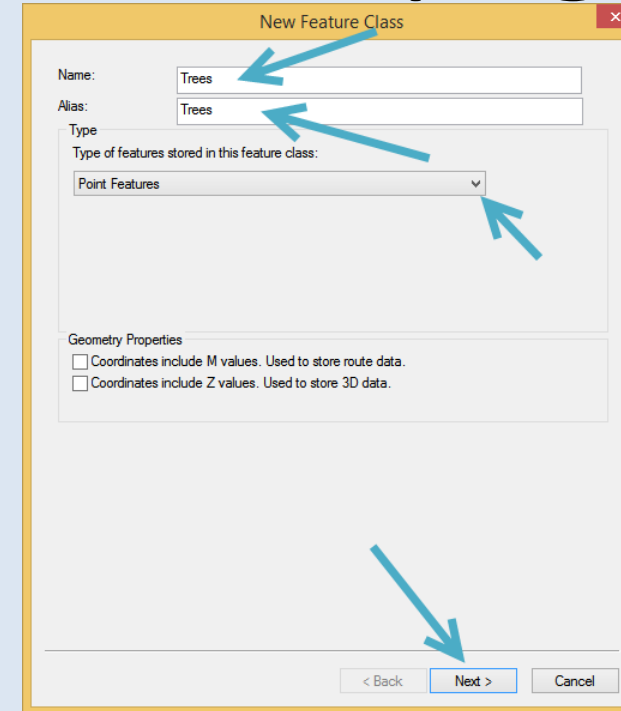
# Initial Information

- What is going to be collected? For this example it will be trees
  - What parameters will be collected? You should use domains which are critical for field data collection.
  - What items will be collected multiple times?
  - Are photographs going to be taken?



# Steps to creation of the file - page 1

- This example will be for Desktop creation without a Relational DB.
- Process:
  - Open ArcMap
  - Open the ArcCatalog tab and select the storage location of the new file, in our case it will be the default.gdb (Not a relational Database)
  - Right click and select New
    - Select Feature Class
    - Name the file
    - This example will be a point file
    - Select Next
  - Select a Coordinate System, note not all coordinate systems are supported.



# Steps to creation of the file – page 2

- Field names (no spaces in names)
  - Type\_of\_Tree (Text – 25 characters)
  - General\_Location (Text – 50 characters)
  - Comments (Text – 200 characters)
  - Picture (Raster)
- Click Finish

Field Name	Data Type
OBJECTID	Object ID
SHAPE	Geometry
Type_of_Tree	Text
General_Location	Text
Comments	Text
Picture	Raster

Click any field to see its properties.

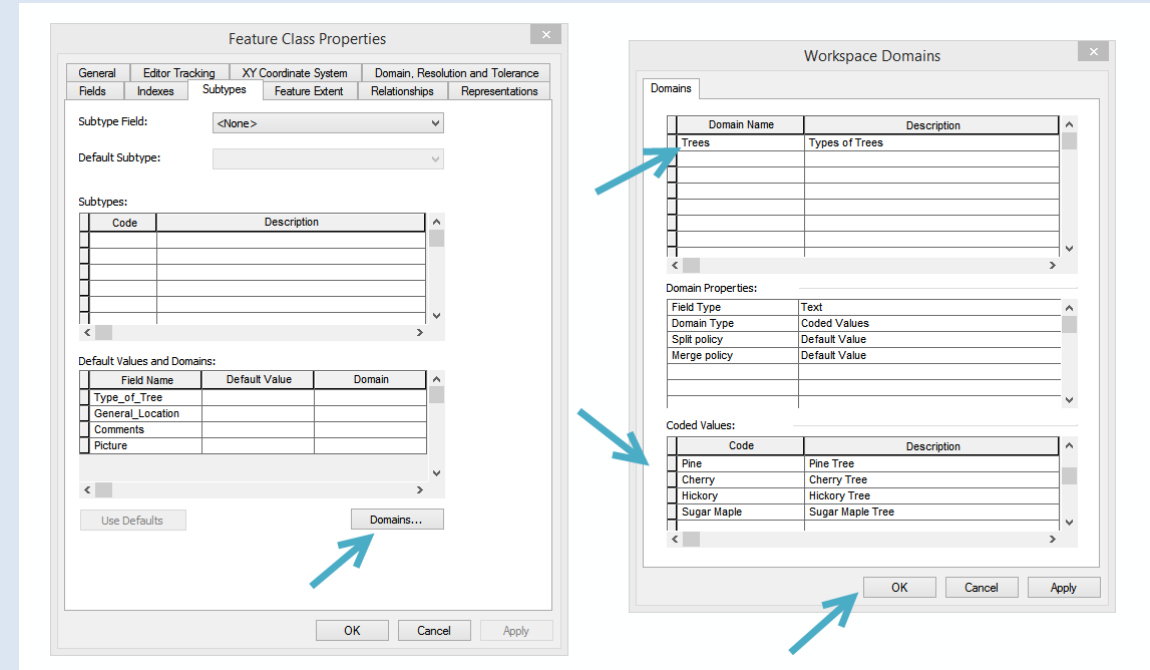
Field Properties	
Alias	OBJECTID

Import...

To add a new field, type the name into an empty row in the Field Name column, click in the Data Type column to choose the data type, then edit the Field Properties.

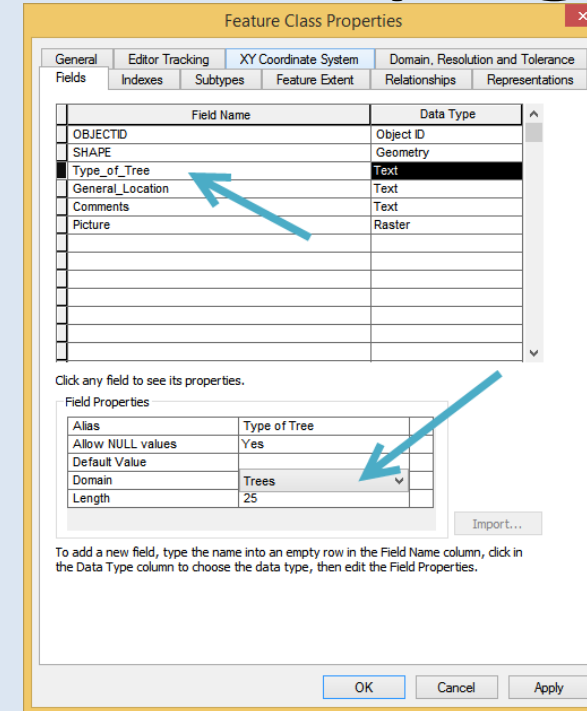
# Steps to creation of the file – page 3

- Open the Feature Class Properties and click Subtypes
- Press the Domains button
- A new window will open
  - Input the Domain Name
  - Input data in the coded values area
  - Click Ok
  - Additional data can be added later.



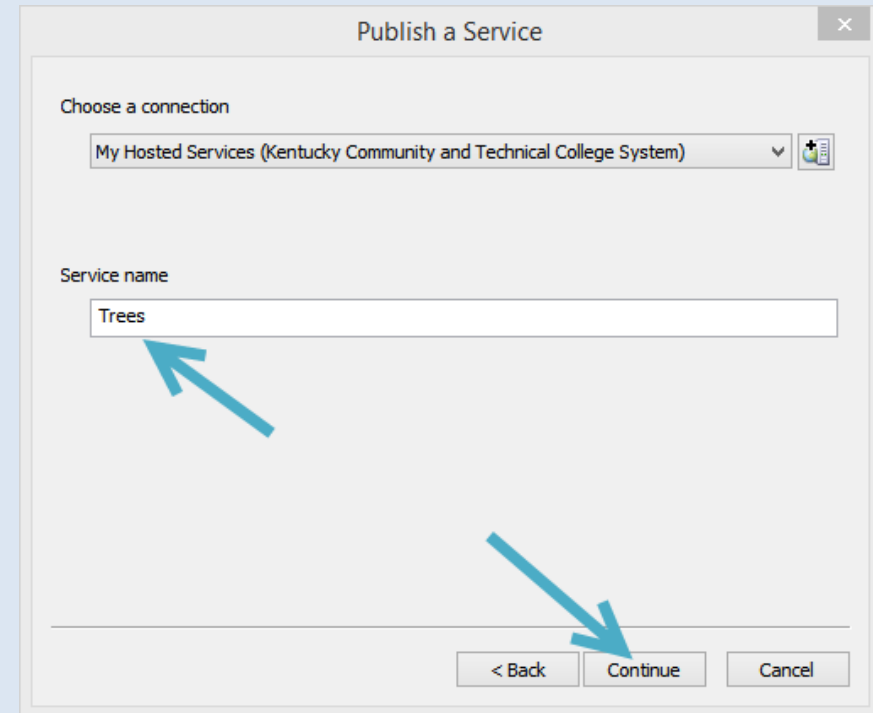
# Steps to creation of the file – page 4

- In the Feature Class Properties go to the Fields tab.
- Highlight the attribute you want to use the domain with.
- In the lower box click on Domain and the pull down arrow will appear and select your domain.
- Click OK to finish.
- An empty point feature class has been created.



# Exporting to ArcGIS Online – page 1

- The next step will be the exporting of the feature class to ArcGIS Online (AGO).
- Make sure you are signed into AGO.
- Go to the File Menu and select Share As and Select Service.
  - Select a service will be published.
  - Select a Hosted Service (KCTCS).
  - Input a service name, no spaces.



Publish a Service

Choose a connection

My Hosted Services (Kentucky Community and Technical College System)

Service name

Trees

< Back Continue Cancel

# Exporting to ArcGIS Online – page 2

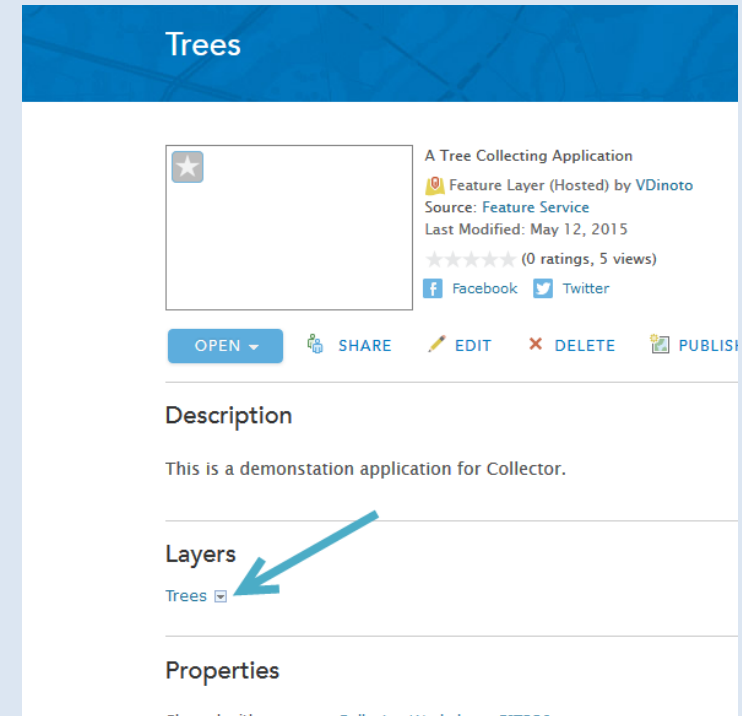
- The Service Editor window will open, click Analyze.
  - Since no metadata was created, a couple errors must be correct, it also does not like the projection of state plane and it will convert to WGS 1984 or it can be changed by the designer which is a better way.
  - A basemap was not selected and that will be done in AGO
- Click on the missing metadata error and a set of dialog boxes will open. After inputting the metadata click Analyze.
- **In capabilities you must check: Feature Access, uncheck Tile Mapping and check all parameters under Feature Access or it will not work properly**
- Publish

# ArcGIS Online – page 1

- <http://arcgis.com> and login.
- Select the appropriate group.
- Select the Feature Layer, use the pull down and select Open and Add Layer to New Map.
- Select basemap I use Open Street Map for many of my projects.
- Select Save As
- Share it with your group.
- Go back to your Group and the Map should be there.
- Open your smart device and the Collector Application, under map, select the **Tree Map**.
- You will see that taking a picture **does not work**.
- This part must be done in AGO.

# ArcGIS Online – page 2

- Adding a picture/attachment
  - Return to descriptive screen about your layer.
  - Click on the small arrow to enable attachments.
  - Save your layer.
- Now you would be ready to add data.





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Under presentations at the bottom of the page.