



Esri International User Conference | San Diego, CA  
Technical Workshops | 14<sup>th</sup> July 2011

# Advanced Customizing of ArcPad Solutions

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<http://twitter.com/ArcPadTeam> - Follow us on #ArcPad

# Technical Workshops

- **ArcPad – Introduction to customizing ArcPad Solutions**
  - Room 30D Tuesday 1:30pm
- **ArcPad – An Introduction**
  - Room 31B Tuesday 3:15pm
- **ArcPad – Building Great Apps & User Group**
  - Room 30A Thursday 12:00pm
- **ArcPad – Advanced customization of ArcPad Solutions**
  - Room 31B Thursday 1:30pm
- **ArcPad/GeoCollector—A High Accuracy Field Mapping Solution**
  - Room 6B Thursday 3:15pm

# Roadmap

## ArcPad 10.0.2

- Integrated customization experience
  - Toolbars
- ArcPad Apps
- Support ArcGIS annotations

## ArcPad 10.0.3

- AXF support in ArcGIS
- quality improvements
- ArcPad developer help online
- Updated Streetmap data

## ArcPad 10.0.4

- Integrated customization experience
  - Forms
- GDB data performance improvements

## ArcPad 10.1

- Compatible with ArcGIS 10.1
- Support of Feature Services
- Support Windows Phone 7

# Agenda

- Review of Customization
- **Customizing Map Navigator**
- **Related table forms**
- **Query Forms**
- SQL
- Geoprocessing
- Deploying with ArcGIS Server
- “Lightning” Tips

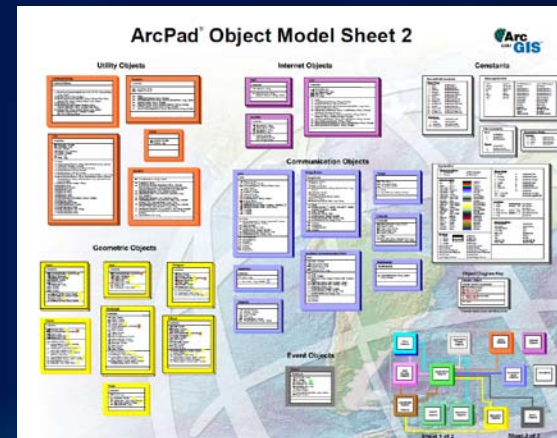
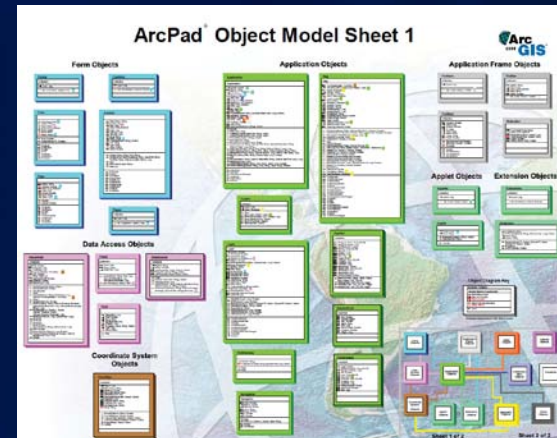
# Customization Review

# What can be customized?



# Scripting environments available for ArcPad

- JavaScript vs. VBScript
- Event Driven
  - Application
  - Forms/Controls
  - System Objects (eg GPS)
- ArcPad Object Model
- Execute SQL Commands



# Configuring Map Navigator



# Map Navigator - The “On Map” tools

- Edit XML in a configuration file (ArcPad.apx)
- Maximum of 8 tools
- 4 Styles
  - “Style 0” = Tall Cross
  - “Style 1” = Wide Cross
  - “Style 2” = Cross
  - “Style 3” = Vertical
- Location
- Tint Color
- Flip Icons
- Use Once – Changes click behaviour



# Map Navigator configuration in **ArcPad.apx**

```
<MAPNAVIGATOR style="2" horzalignment="left" tintcolor="0,20,40"  
backgroundcolor="SteelBlue" transparency="0.0" buttonsizes="0">
```

```
<TOOLBUTTON command="modeidentify"/>
```

```
<TOOLBUTTON command="fixedzoomin"/>
```

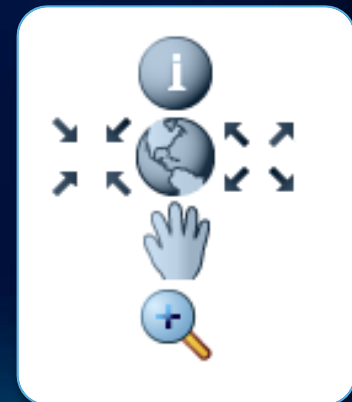
```
<TOOLBUTTON command="fixedzoomout"/>
```

```
<TOOLBUTTON command="zoomfullextent"/>
```

```
<TOOLBUTTON command="modepan" useonce="true"/>
```

```
<TOOLBUTTON command="modezoomin" useonce="true"/>
```

```
</MAPNAVIGATOR>
```



# App Shortcuts

# Create Shortcut Apps



## ArcPad App shortcuts

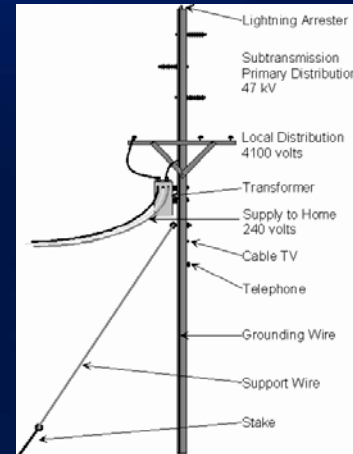
- "C:\Program Files\ArcGIS\ArcPad10.0\ArcPad.exe" - multiapp  
"C:\Users\Public\Documents\ArcPad\Samples\Riverside\Riverside.apm"

# ArcPad command line options

- **-multiapp** Allow multiple instances of ArcPad to run on Windows.
- **-prefs <filename.apx>** Override default preferences file
- **-config <config.apx>** Override config file specified in preferences
- **-applet <filespec>** Load specific applet. Can be specified multiple times and may also contain wildcards.
- **-noapplets** Do not load applets from paths specified in preferences.
- **-noconfig** Do not load config
- **-nosplash** Don't show splash screen
- **-debug** Debug mode. Log debug information
- **-nostatusbar** Don't show status bar
- **-minimize** Start minimize
- **-noaccel** Don't handle keyboard accelerators
- Windows Specific
  - **-nodesignmode** Disable design mode
  - **-skin=<filename>** Open ArcPad with a device skin
  - **-size=<size>** Set the size to open ArcPad
  - **-symboldpi=<dpivalue>** Symbol DPI
  - **-showversion** Show the version number

# **Related Table Forms**

- **1 to many relationships**
  - Each feature can support multiple sets of attributes in separate tables
- **Changed user experience in ArcPad 10**
- **Forms generated ArcPad Data Manager can be customized**



PoleID	Type	Built
123	Wood	8-Oct-99
124	Steel	5-Jul-87
125	Wood	7-Jun-99



PoleID	Insulator #	Type
123	1	200kv
123	2	400kv
123	3	200kv

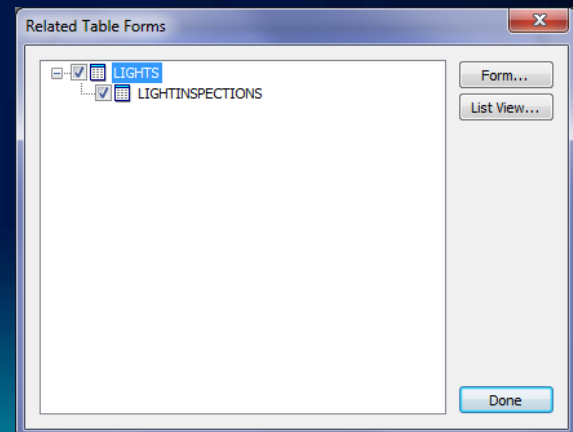


PoleID	Insulator#	Inspector	Date
123	1	Jian	1-Jan-00
123	1	Elvin	5-Feb-04
123	1	Craig	10-Jun-06

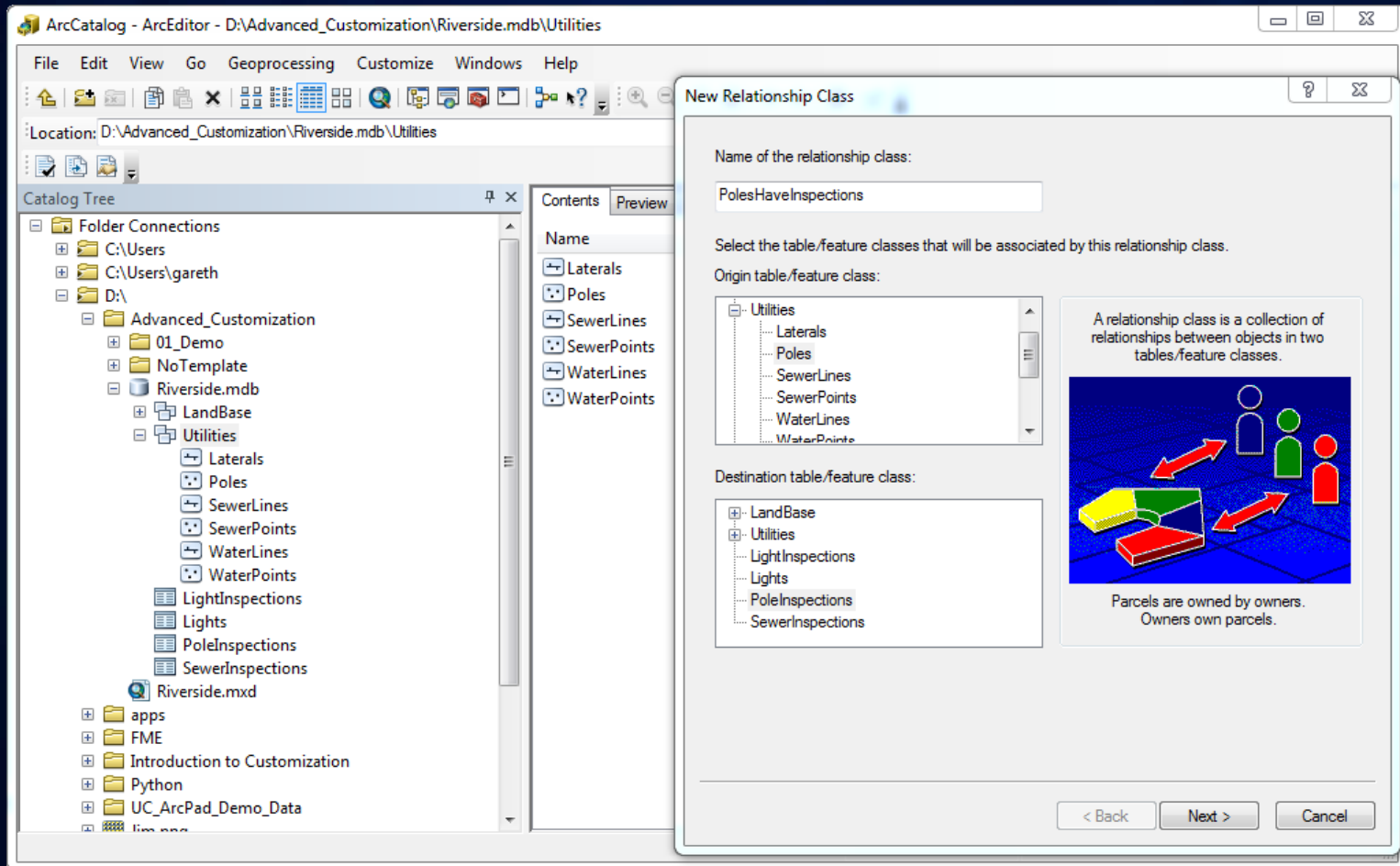


# Related Table Forms

- ArcPad Data Manager automatically creates forms for feature layer and each related table
- Each Related Table can have its own forms and scripts
- Independent forms for edit and identify
- Customize columns that appear in the list view
- Photo tab supported
- Easy to configure



# Building relationships



# List view + forms in Studio

The screenshot illustrates the workflow for creating a list view and form in ArcGIS Studio. It shows several overlapping windows:

- Riverside\_mdb.axf**: The main project window showing the tree structure. The **Poles** layer is highlighted in the **Feature Layers** pane.
- Riverside\_mdb.axf:Poles**: The layer definition window. The **<FORMS>** folder is highlighted, and the **src=.vbs** script is visible.
- Forms**: The form creation window. The **EDITFORM** form is selected, and the **POLEINSECTIONS** table is highlighted in the **Related Table Forms** pane.
- POLEINSECTIONS**: The form design window. The **Page 1** tab is active, showing the form layout with fields: **PoleID**, **InspectionDate** (14/07/201), **Inspector**, **Condition**, **Comment**, and **InspectionID**.
- Controls**: The control panel showing the **POLEID**, **INSPECTIONDATE**, **INSPECTOR**, **CONDITION**, **COMMENT**, and **INSPECTIONID** fields.
- List View Column Properties**: The list view configuration window. The **INSPECTIONID** field is highlighted in the table.

**List View Column Properties**

Caption	Width	Alias	Field	Allow Add	Allow Edit	Allow Delete
LightID	50	LightID	POLEID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
INSPECTIONDATE	50	INSPECTIONDATE	INSPECTIONDATE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
INSPECTOR	50	INSPECTOR	INSPECTOR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CONDITION	50	CONDITION	CONDITION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
COMMENT	50	COMMENT	COMMENT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
INSPECTIONID	200	INSPECTIONID	INSPECTIONID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

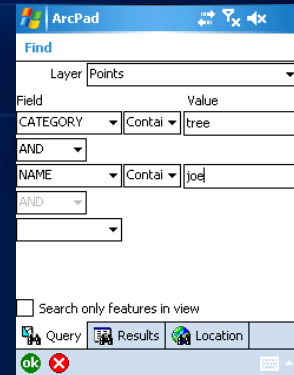
# Related Table Forms

The background of the slide features a dark blue gradient with abstract, flowing shapes. A light blue grid is overlaid on the left side, consisting of four vertical lines and four horizontal lines, creating a 5x5 grid of squares. In the bottom right corner, there is a stylized, semi-transparent image of a globe showing landmasses and oceans.

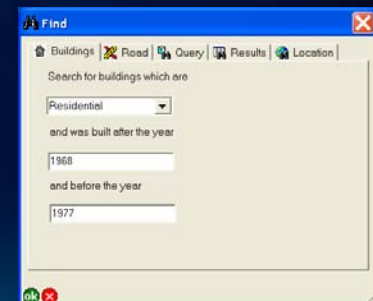
# Query Forms

# Query Forms

- Query forms are search “templates” that automatically get added to the “Find” dialog
- Default query form automatically created for each feature class
- Useful for simplifying field work flows requiring repeatedly performed searches



The screenshot shows the ArcPad Find dialog. At the top, the title bar says 'ArcPad'. Below it, the 'Find' tab is selected. The 'Layer' dropdown is set to 'Points'. The 'Field' and 'Value' columns are visible. The first row has 'CATEGORY' in the field and 'tree' in the value, with a 'Contain' operator. The second row has 'NAME' in the field and 'joe' in the value, also with a 'Contain' operator. The 'AND' operator is selected between the two rows. At the bottom, there is a checkbox for 'Search only features in view' and buttons for 'Query', 'Results', and 'Location'.



The screenshot shows the Find dialog with the 'Buildings' layer selected. The title bar says 'Find'. The 'Buildings' tab is selected. The text 'Search for buildings which are' is followed by a dropdown menu set to 'Residential'. Below this, the text 'and was built after the year' is followed by a text box containing '1968'. Below that, the text 'and before the year' is followed by a text box containing '1977'. At the bottom, there are 'ok' and 'cancel' buttons.

# **Harnessing SQL**

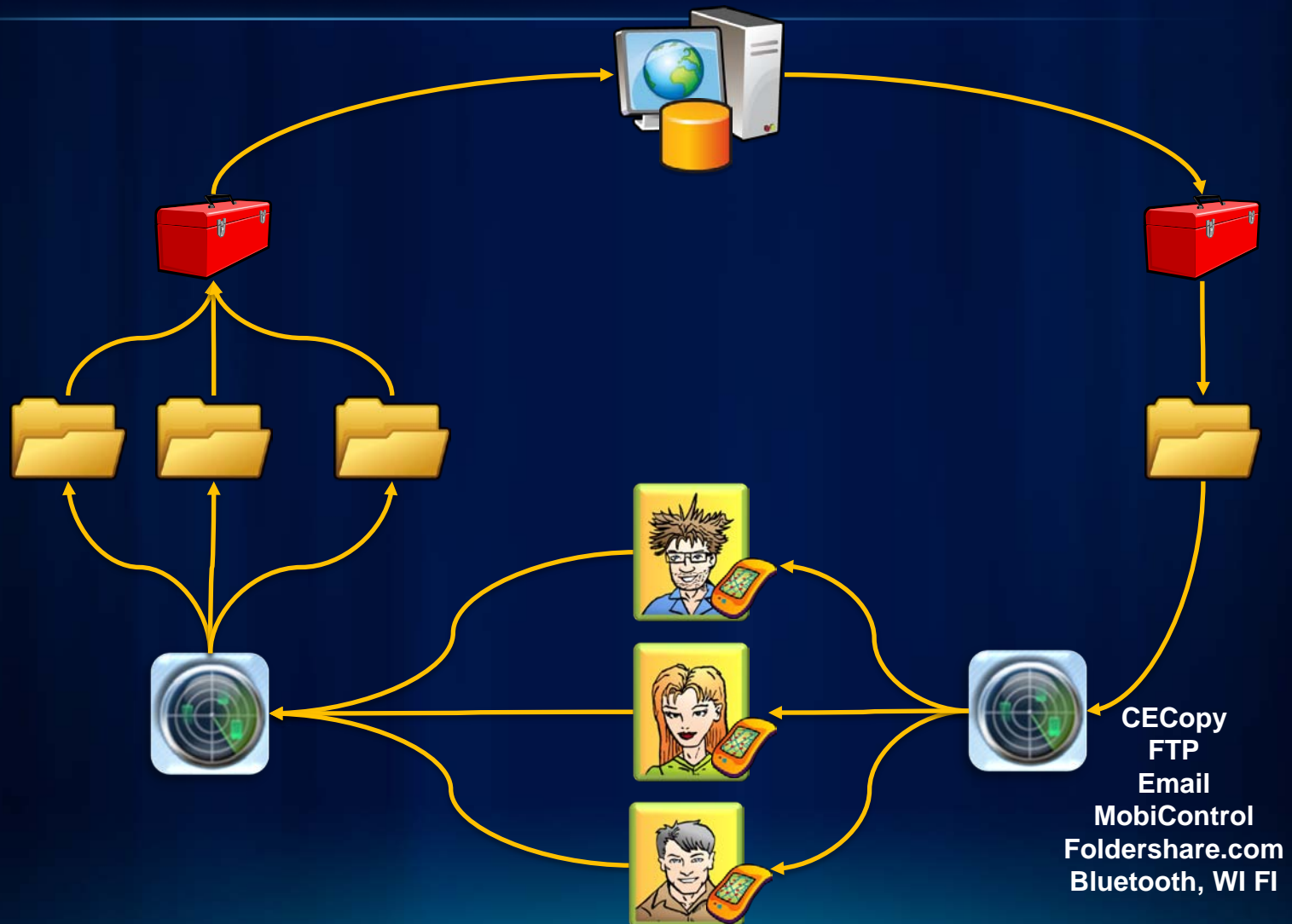
# SQL

- **Map production – Definition Query**
- **Use standard SQL to edit/maintain data**
  - **SELECT**
  - **UPDATE**
  - **DELETE**
- **Connect via the Datasource object**
  - **Datasource.Execute("SELECT MAX(AXF\_OBJECTID)  
FROM PARCEL ")**
- **Use SQL transactions on bulk operations to maintain integrity in case of failure**

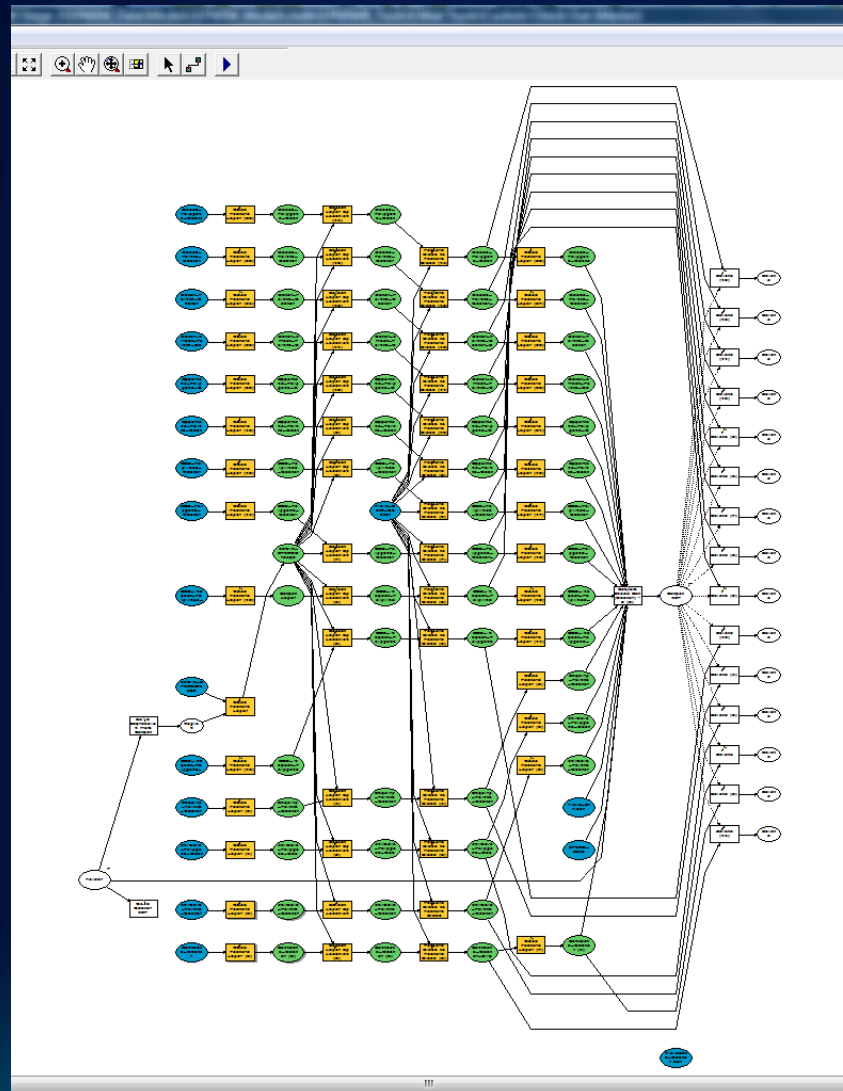


# **GeoProcessing to Automate**

# Where you can automate

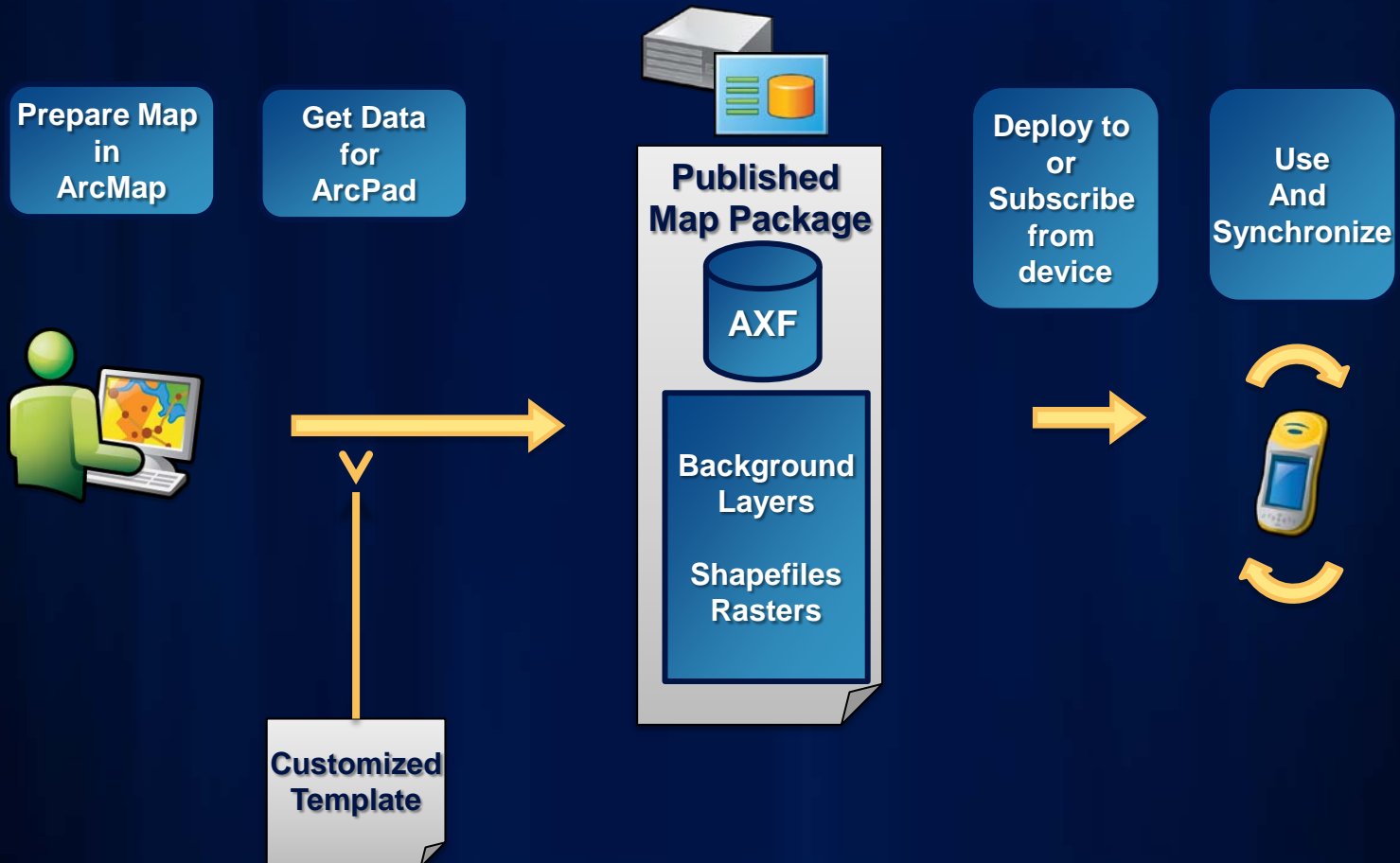


# Geoprocessing



# Deploying in ArcGIS Server

# Publishing Customization on ArcGIS Server



# **“Lightning” Tips**

# “Lightning” Tips

- **Connectivity to ArcLogistics Navigator**
- **Base Map Caches** - <http://arcpadteam.blogspot.com/2010/07/basemap-image-tiles-for-arcpad-10.html>
  - Standard
  - Your ArcGIS Map services
- **Connect to other ArcGIS Services**
  - GP services (visit the demo theater)
- **Python + CECopy (Windows Power Toys) = autoDeploy**
- **Emulator** - <http://arcpadteam.blogspot.com/2010/06/using-device-emulator-with-arcpad-10.html>

## Other Studio Tips

- **Expert Mode**
  - **Modify shortcut adding /EXPERT to command line**
  - **Export feature class to Shapefile**
  - **Export tables to DBF**
  - **Create blank AXF**
  - **Import Shapefiles/DBF**
- **[Delete] key to delete selected control**
- **Align/size controls on forms**
  - **Last control is used as reference**
  - **Hold down CTRL to highlight reference**
  - **Shortcut keys**



# Resources

**Make your suggestions known :**

<http://ideas.arcgis.com/>

**Resources**

<http://resources.arcgis.com/content/arcpad/10.0/about>

**Team blog**

<http://arcpadteam.blogspot.com/>

**Twitter**

<http://twitter.com/ArcPadTeam>







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