



Esri International Developer Summit
Palm Springs, CA

Deploying Your Geoprocessing Tools as Python Modules

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ArcGIS Supported Versions

- ArcGIS 10.2 and later
- ArcGIS Pro
- ArcGIS will find esri directory in site-packages

Python Distribution Utilities

- **Distutils**
 - **Build**
 - **Distribute**
 - **Install**
- <http://docs.python.org/2/distutils/>

Directory Structure

- Source distribution
- setup.py
- __init__.py
- esri directory
 - arcpy
 - help
 - gp
 - messages
 - toolboxes
 - toolboxes

Distribution and Install

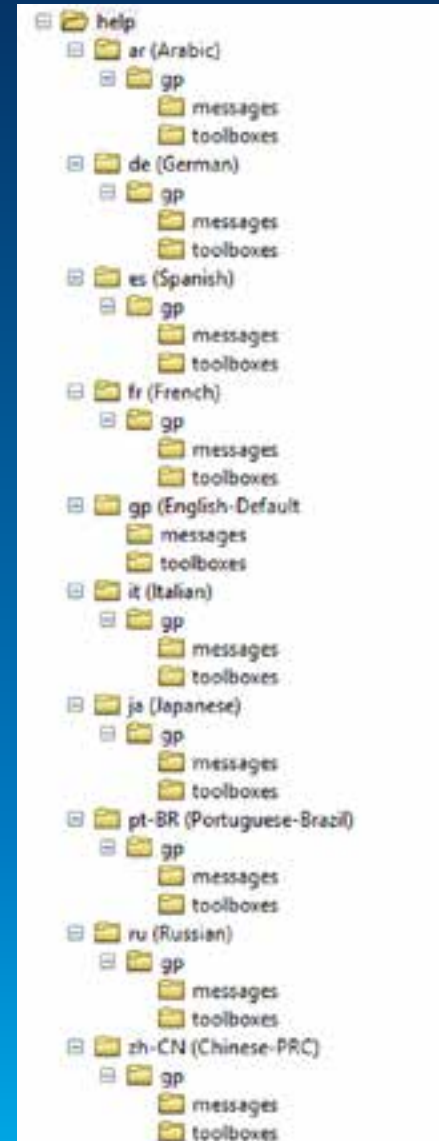
- Path to python.exe set on system
- Windows:
 - python setup.py bdist_wininst
- Linux:
 - python setup.py bdist_rpm
- python setup.py install
- python setup.py sdist
- pip

Extending GP Functionality

- **Add Python Toolboxes**
- **Add custom tools, toolboxes, and scripts**
- **Extend ArcPy**
- **Message distribution**
- **Language-based help**
- **Localization**
- **Accessible in ArcGIS System Toolboxes**

Internationalization

- ArcGIS supported languages
- gp directory defaults to English



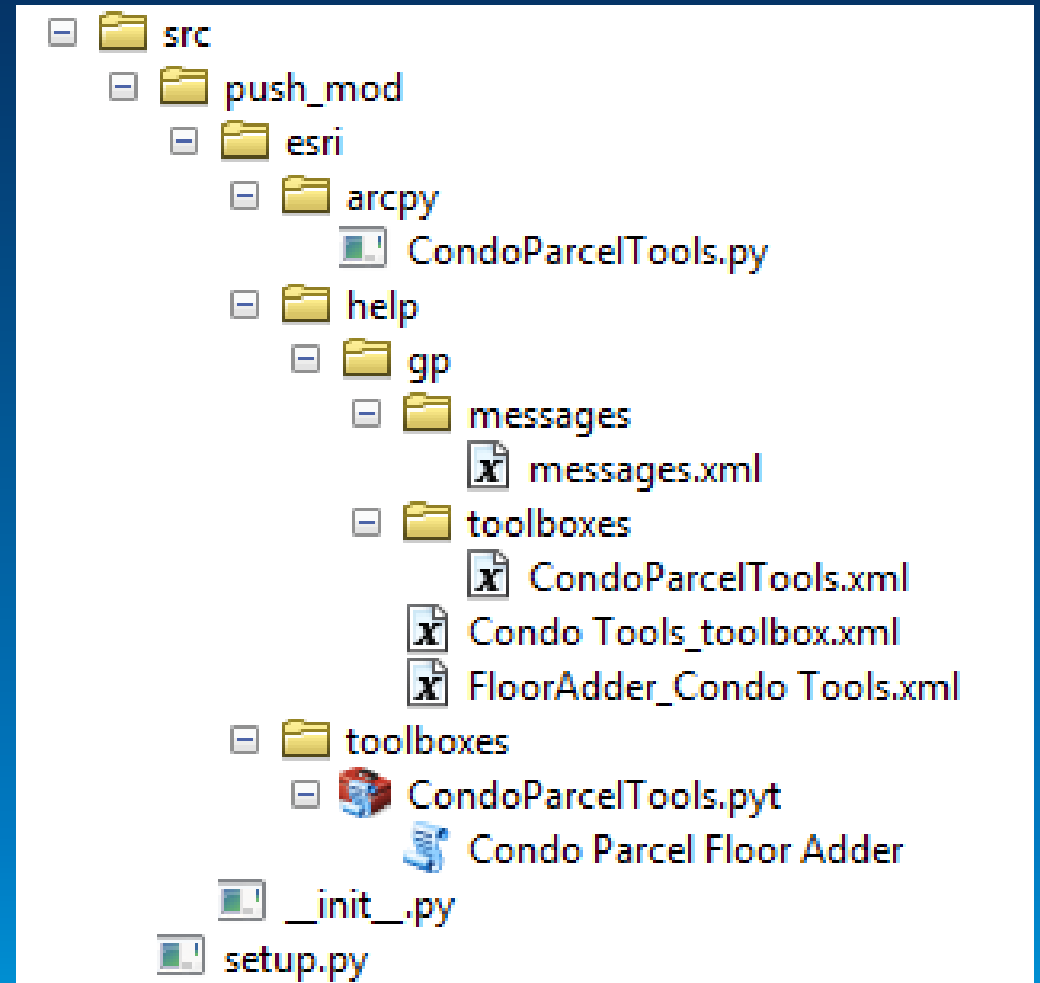
Create Toolbox Support Files

- `arcpy.gp.createtoolboxsupportfiles(<path to .tbx or .pyt>)`
- **gp help in language specific directories**
 - **help/gp**
 - Toolbox and tool metadata
 - Side-panel help and Item Description
 - **help/gp/toolboxes**
 - Override localizable labels
 - **help/gp/messages**
 - .xml of localizable strings
- **Create messages directory**
 - Create custom messages
 - Localize error messages

Default Distribution

- **setup.py**

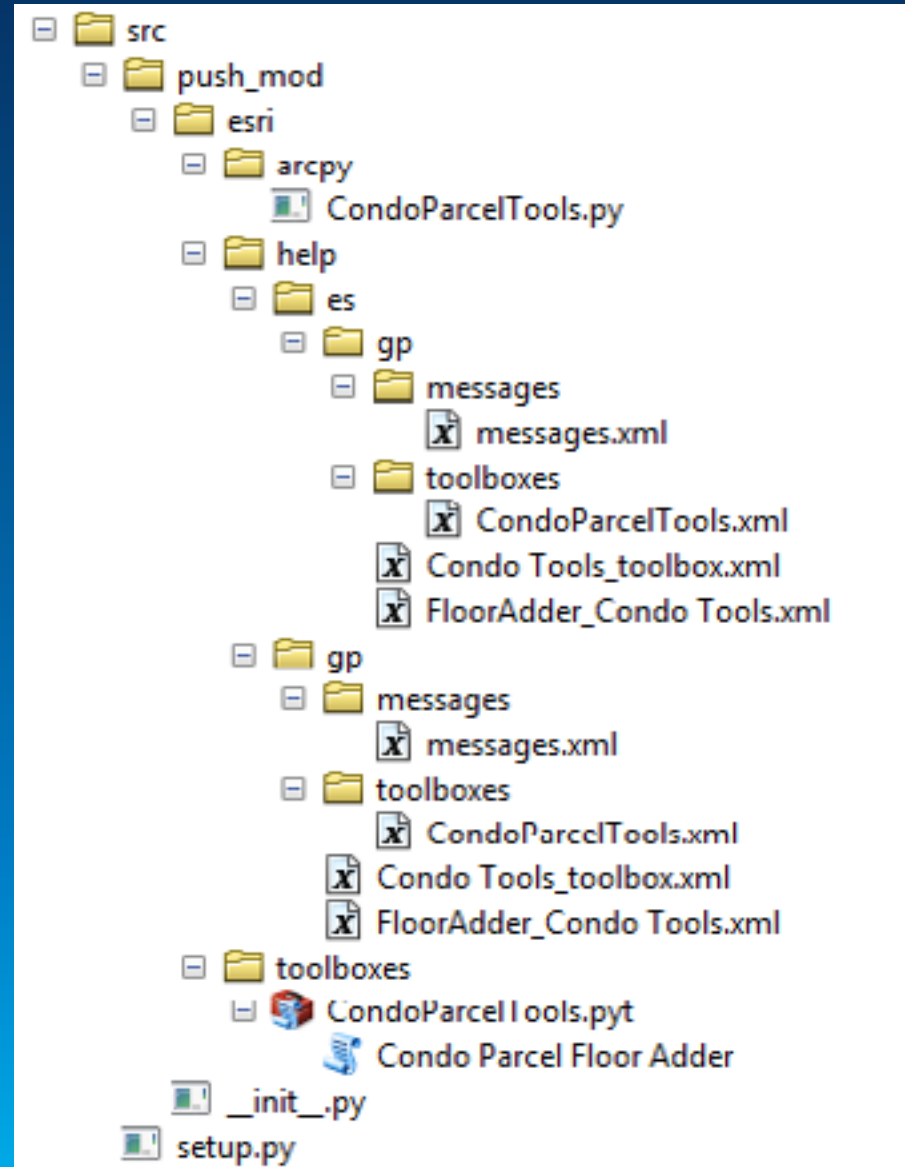
```
setup(name="push_mod",  
      version="1.0",  
      packages=["push_mod"],  
      package_dir={"push_mod":"push_mod"},  
      package_data={"push_mod":["esri/toolboxes/*.*",  
                                "esri/arcpy/*.*",  
                                "esri/help/gp/messages/*.*",  
                                "esri/help/gp/toolboxes/*.*"]}  
      )
```



Multiple Localization Distribution

- **setup.py**

```
setup(name="push_mod",  
      version="1.0",  
      packages=["push_mod"],  
      package_dir={"push_mod":"push_mod"},  
      package_data={"push_mod":["esri/toolboxes/*.xml",  
                                "esri/arcpy/*.py",  
                                "esri/help/gp/messages/*.xml",  
                                "esri/help/gp/toolboxes/*.xml",  
                                "esri/help/es/gp/*.py",  
                                "esri/help/es/gp/messages/*.xml",  
                                "esri/help/es/gp/toolboxes/*.xml"]},  
      )
```



Links

Extending geoprocessing through Python modules

<http://esriurl.com/ExtendingGP>

Internationalization of Python modules

<http://esriurl.com/ExtendingGP2>

Distributing Python Modules

<http://docs.python.org/2/distutils/>

Demo: Deploying GP Tools as Python Modules

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Understanding our world.