Network Analysis Services in ArcGIS Enterprise

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Slides from this demo theater

http://esriurl.com/uc17nas
Agenda

- Network Analyst concepts
- ArcGIS Enterprise publishing workflow
  - Geoprocessing services
  - Network Analysis services
- Using network analysis services
Network Analyst Concepts
ArcGIS Network Analyst
Solve Transportation Problems

- Route
- Closest Facility
- Service Area
- Vehicle Routing Problem
- Location-Allocation
- Origin-Destination Cost Matrix
Analysis is performed on a network dataset
Where do I get a network dataset?

• Purchase StreetMap Premium for ArcGIS
  - High quality ready-to-use network dataset
  - Can add your own street data as well

OR

• Build your own network dataset from:
  - Your organization’s data
  - TIGER
  - OpenStreetMap (try ArcGIS Editor for OpenStreetMap)
What is ArcGIS Enterprise?

• Enables “Web GIS” in your infrastructure
  - On-premises or in your own cloud

• Formerly known as ArcGIS for Server
What are GIS services?

- **GIS service** → GIS resource running on a server
  - vs. GIS application on your local computer

- Share GIS resources to the web
Publishing workflow for GIS services

1. Author

2. Publish

3. Share/Use
Publishing network analysis services
Can be published as two different service types

**Geoprocessing Service**
1. Author using geoprocessing tools from the Server toolset
2. Run the tools and publish the result as a service
3. Use from Map Viewer, ArcGIS Pro and ArcMap

**Network Analysis Service**
1. Author using a map document with network analysis layers
2. Publish the map document as a service
3. Use from Map Viewer and ArcMap (Route solver only)
Geoprocessing or network analysis services?
Choosing the correct service type

- Both geoprocessing and network analysis service support the full network analysis capabilities

**Select geoprocessing service if**
- Analysis runs for long duration (greater than 60 seconds)
- Out-of-the box app support is important
- Network analysis is just one part of a larger analysis
- Need to access the traversal result for further analysis
- Need to access OD Cost Matrix, Vehicle Routing Problem, or Location Allocation Solvers from REST based Web APIs

**Select network analysis service if**
- Analysis runs for short duration (less than 60 seconds)
- Need very fast execution
Publishing Services
I have a network dataset and want to publish all network analysis services. Is there a single tool that can perform the authoring and publishing of these services?

YES
Publish Routing Services tool

• Setup instructions and tool available on GitHub
• Requires ArcMap and Network Analyst extension to publish services
• If publishing to a federated GIS Server, the tool registers the network analysis services as portal utility services
• New at 10.5: Use any network dataset and not just StreetMap Premium
Asynchronous geoprocessing service

Network analysis service

Synchronous geoprocessing service

Service to get travel modes
Registering services with your portal

- Configure as Directions and Routing utility services in your portal
- Allows all apps to discover the network analysis services
- Required by many apps in order to use the services
- Configured by Publish Routing Services tool if publishing services to a federated GIS Server
Using Services
Map Viewer, ArcGIS Pro, and ArcMap
Using services in Map Viewer

- Directions button
- Analysis tools
  - Most tools in the Use Proximity toolset
  - Choose Best Facilities tool in Find Locations toolset
  - Summarize Nearby tool in Summarize Data toolset
Using services in ArcGIS Desktop

- Use from Network Analysis gallery in the Analysis tab within ArcGIS Pro
- Use from a ArcGIS Server connection in ArcMap
Demo

Publish and use network analysis services
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Questions?

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