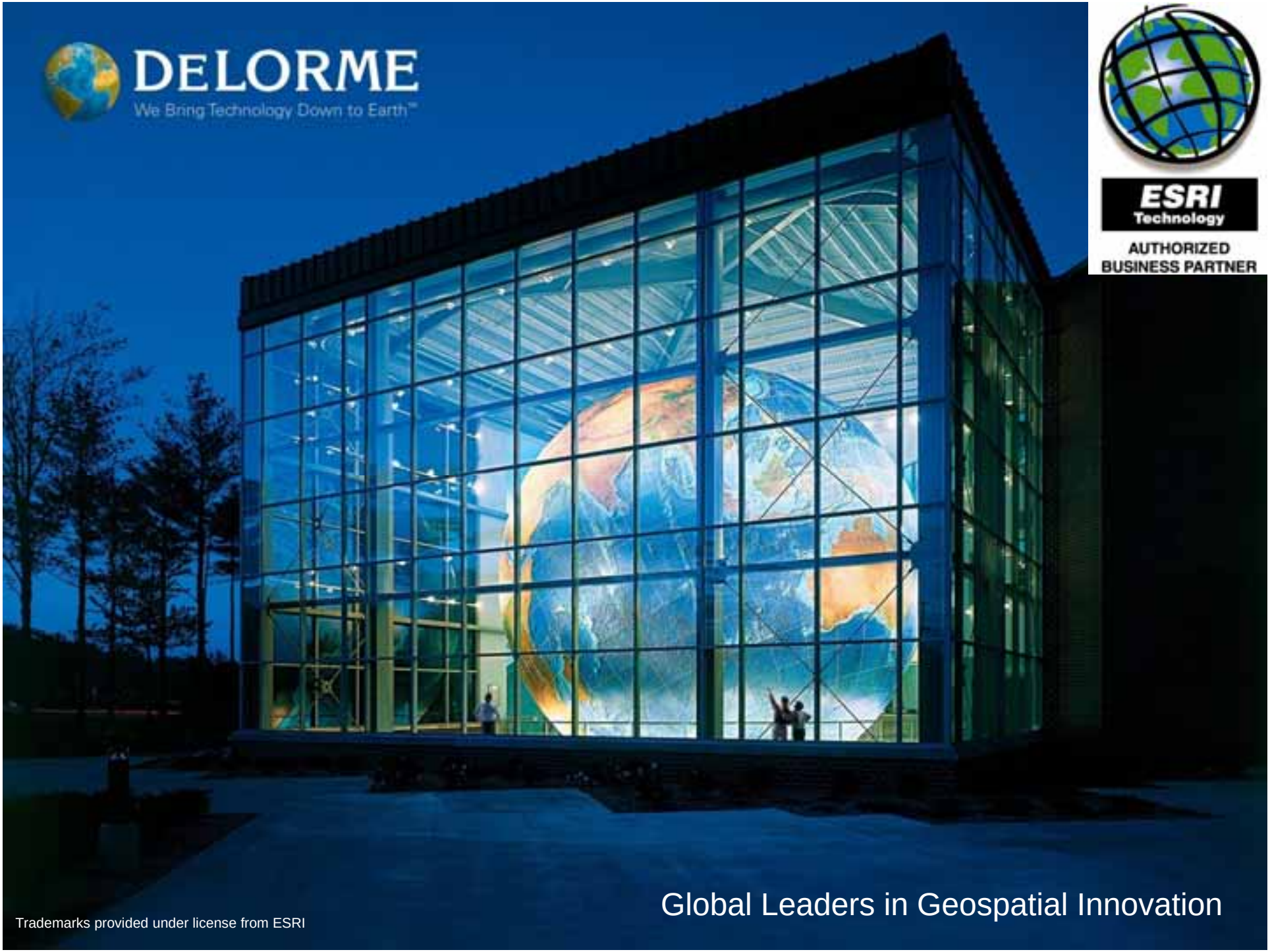
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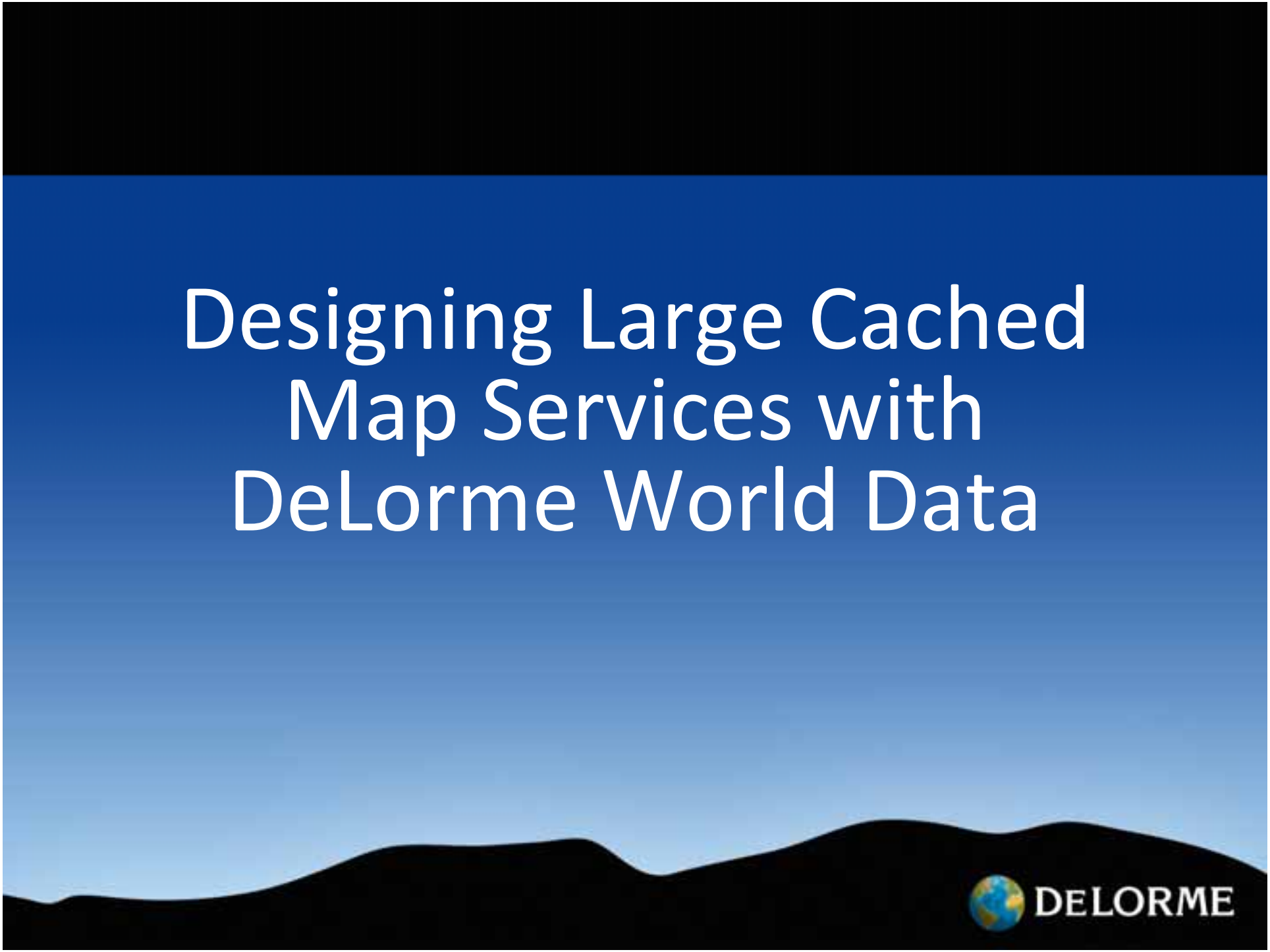
Designing Large Cached Map Services with DeLorme World Data



Initial Cache Setup

- Web Mercator Aux Sphere coordinate system
- Define number of zoom levels to be used
  - We used ten, 1:148 million down to 1:289k
- Define small test area to be cached
  - We chose the country of Colombia
- Outline features to be displayed at zoom levels
  - Displayed features should be appropriate to map scale
- Define style of your map

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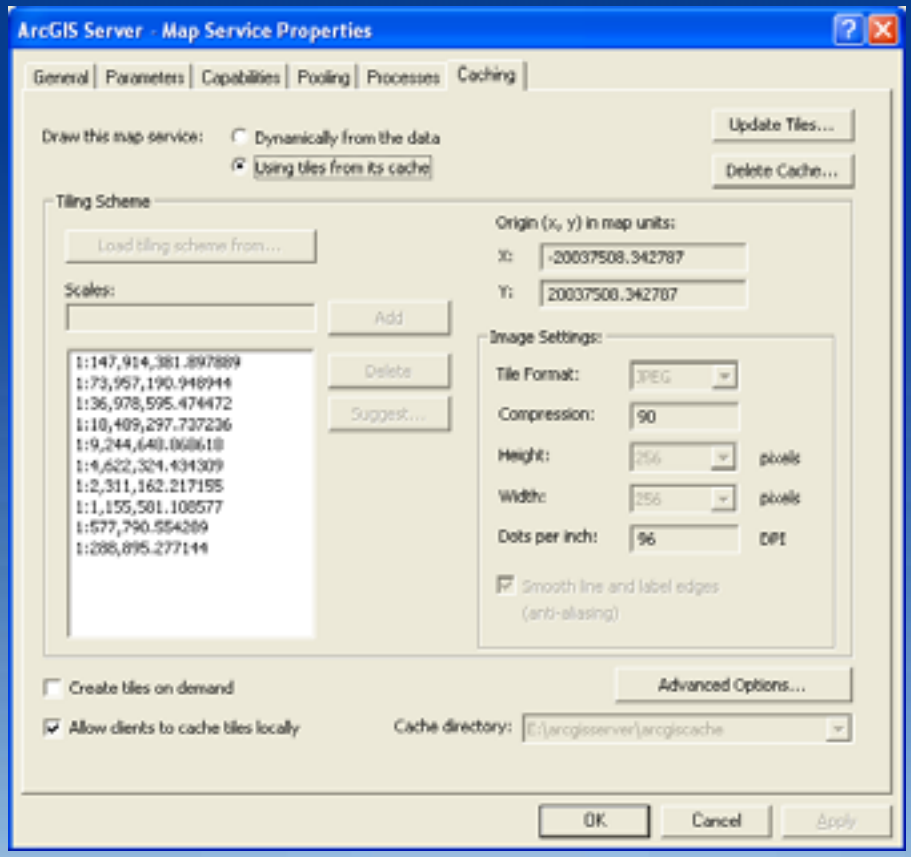
Map Service Properties

- Ten scales
- JPEG tile format
  - No transparencies
- 256x256 tile size
  - Improved performance
- Fused cache



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Labeling

- Maplex labeling engine is a valuable tool
  - Allow time for experimenting with different label placement options at different zoom levels
  - Take the time to establish rules for Maplex that meet the needs of your cached data
- To create clean-looking type you should
  - Turn anti-aliasing on
  - Use JPG file format for cached tiles
  - Set LOI for different features

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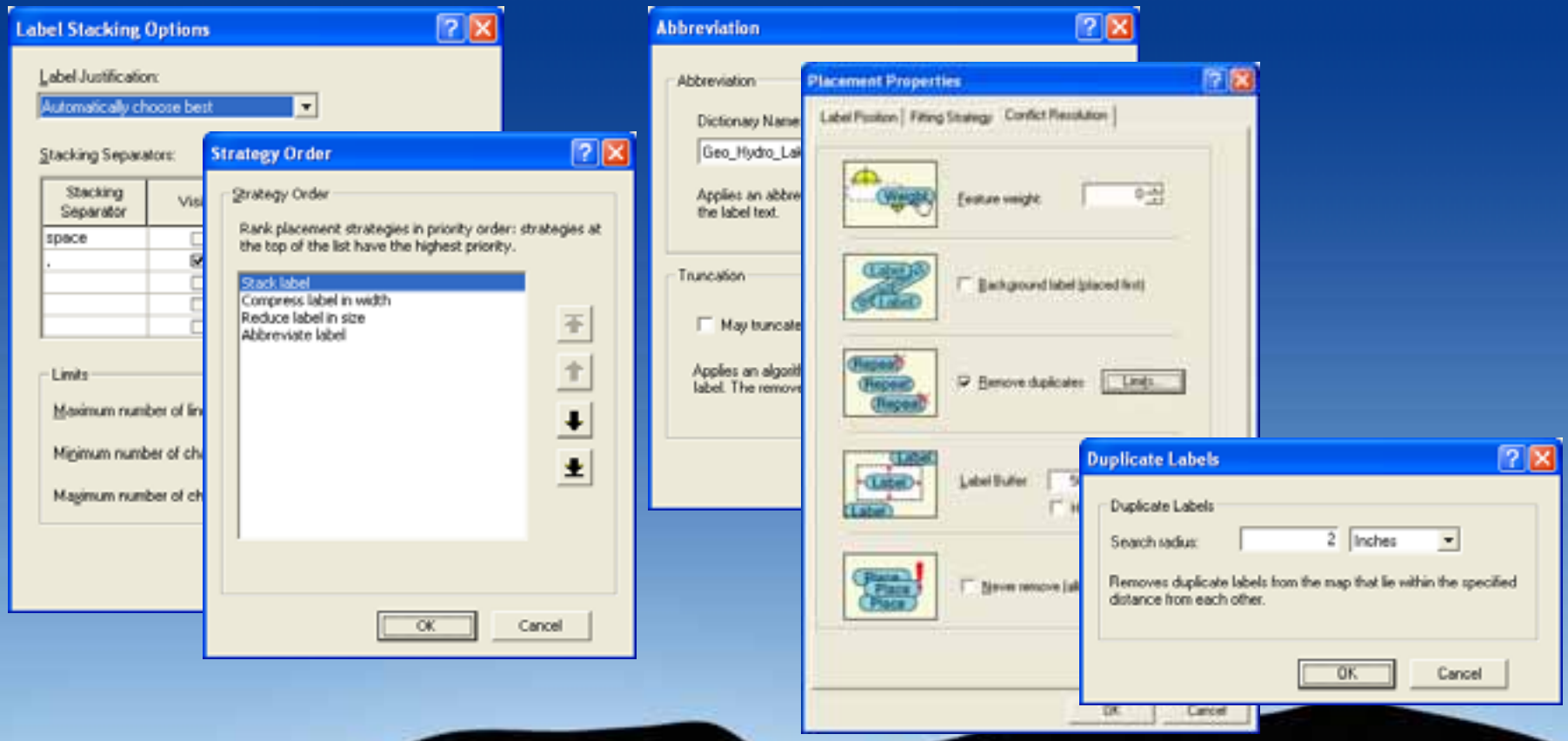
Maplex settings

- Use all available options to get nice labels



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Maplex – Before and After

Before

After

- Some label editing may be need to be done by hand in dense areas

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What is displayed at each zoom level or scale? What changes from 1 to 2 to 3 etc.

1 = Continent outlines and oceans with labels

2 = 1 + Boundary lines, country names and lakes and rivers

3 = 2 + LULC and labels for major seas and bays

4 = 3 + Country capitals, major cities, additional country and water body labels

5 = 4 + Contour lines, first order admin boundary lines, urban areas, island names

6 = 5 + Major roads, hydro lines, inland hydro labels, major mountain peak labels, additional place names

7 = 6 + Major airports, railroads, ferry lines, secondary roads, more place names

8 = 7 + Route numbers, more roads, railroads, all airports w/ labels + runways, labeled rivers, place names, island labels, geo-features, intermittent hydro lines

9 = 8 + All roads, tunnels for railroads and roads, additional hydro lines

10 = 9 + All ferry lines, additional route numbers, additional inland hydro labels

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Data transition between scales

Zoom 5

Zoom 7

Zoom 10

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Timing is important

- Allow plenty of time to cache and re-cache after corrections/tweaks are made
  - DeLorme World Data took days to cache…
  - 140 machine hours required for caching time
- Millions of individual tiles to deal with
- Re-cache only updated areas to save time
- No need to cache the ocean more than once
  - A hard lesson learned

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Optimizing cache generation and delivery times

- Install maximum amount of RAM in your caching machine and have plenty of hard disk space
- Connect to SAN environment, maximize read/write speed
- Research which file system works best for you
  - FAT32, NTFS, etc.
- Establish a delivery format
  - TAR files work well for streaming many files into one
- Test your caching process to ensure things go smoothly

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Accessing DeLorme's World Basemap Cache

- DeLorme World Basemap Cache can be accessed on ArcGIS.com
- Viewed on a variety of platforms
  - ArcGIS Explorer, Google Earth, Bing Maps
- Generate KML files, customize layers displayed
- Export specific area as image, JPG, PNG, etc.

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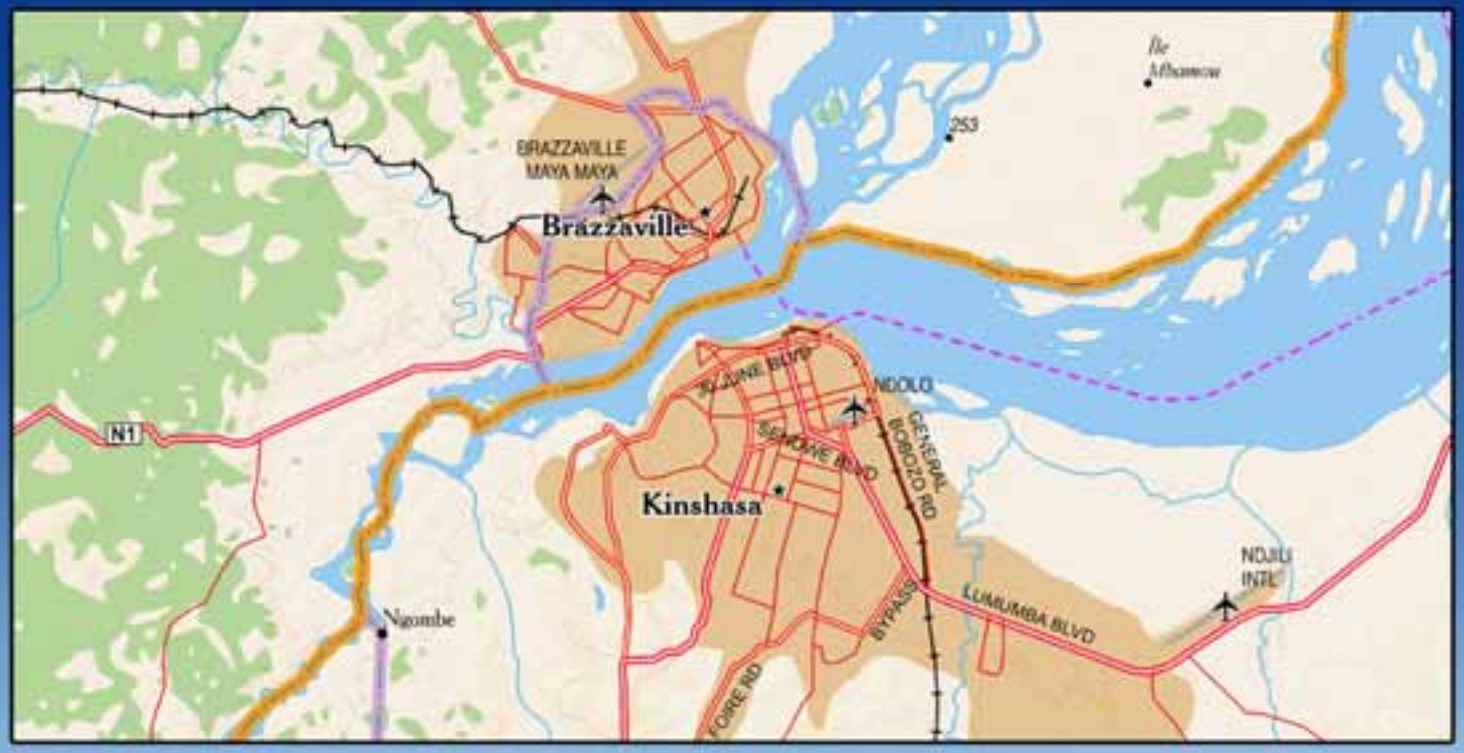
The DeLorme World Base Map cache is…

Global… **Comprehensive…** **Accurate…** **Seamless…** **Consistent…**



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Thank you

Time for Questions