

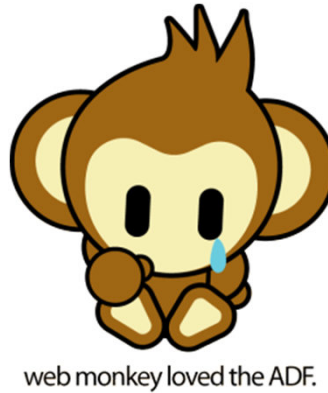
LESSON LEARNED: THREE YEARS OF ARCGIS RUNTIME FOR WPF | DEVSUMMIT 2014



Available for download right now

- <http://bjorn.kuiper.nu>

Presentation



Windows Forms & ArcObjects SDK



Microsoft®
Silverlight™

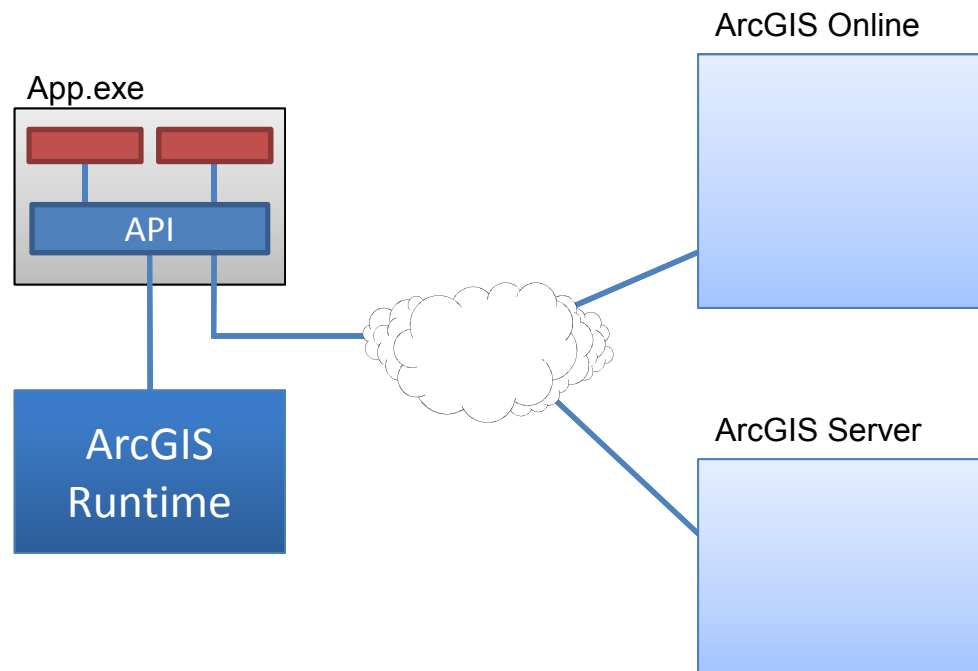


ArcGIS Background

Image source: "web monkey loved the ADF" from Dave Bouwman blog



Why use ArcGIS Runtime



ArcGIS Runtime diagram



Footprint



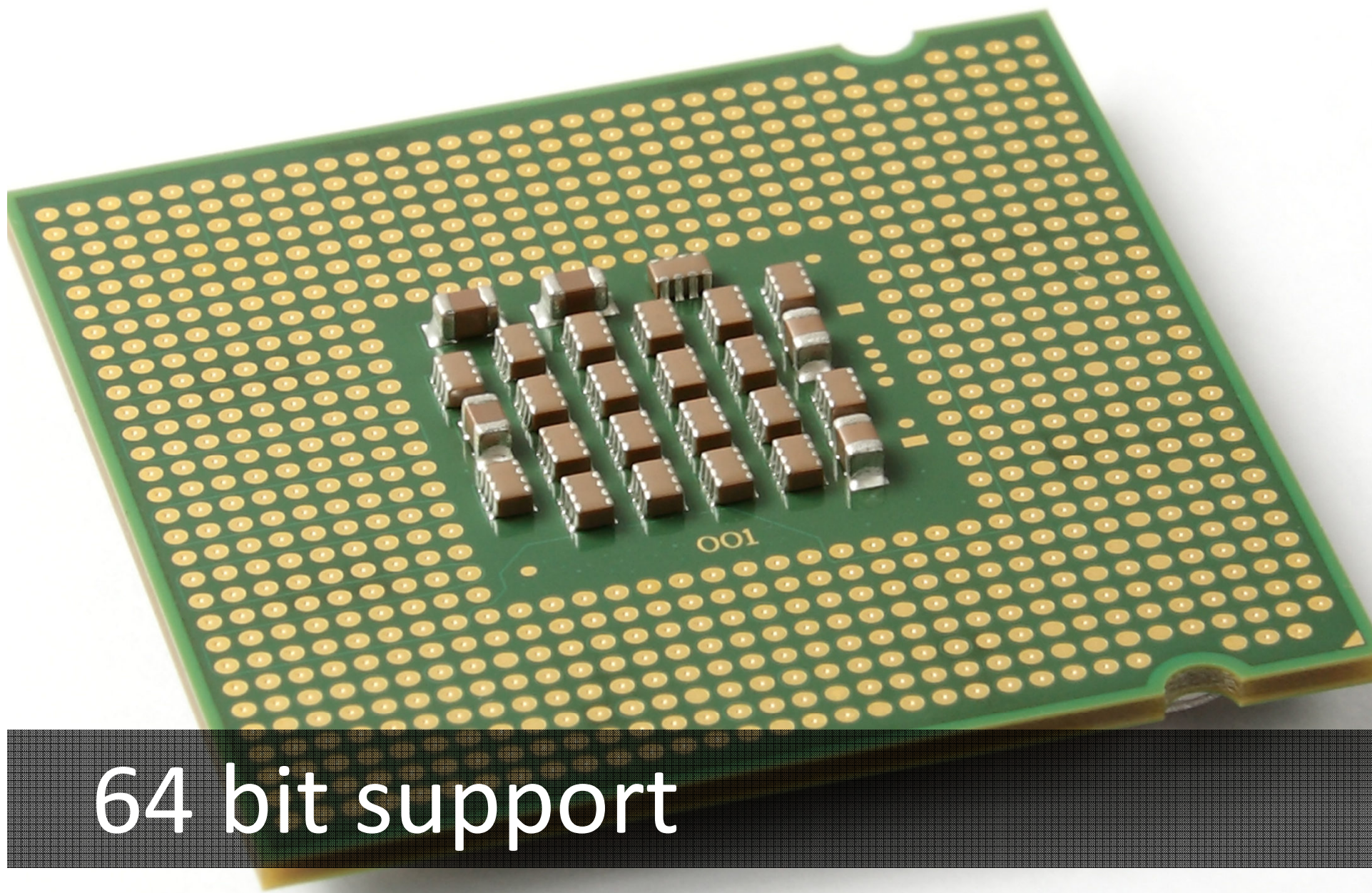
Maintenance

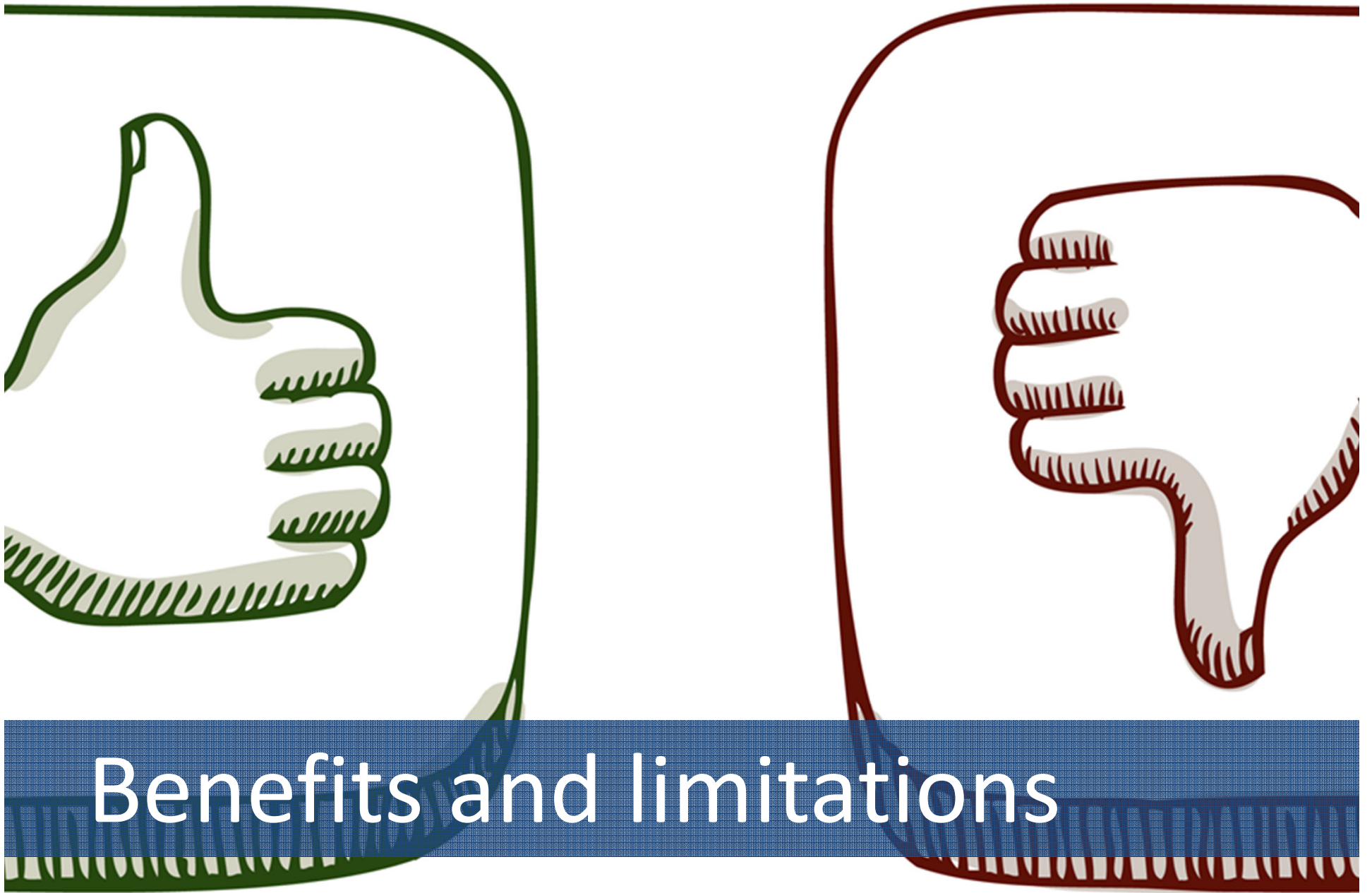


Built for performance



Map & Geoproc. packages



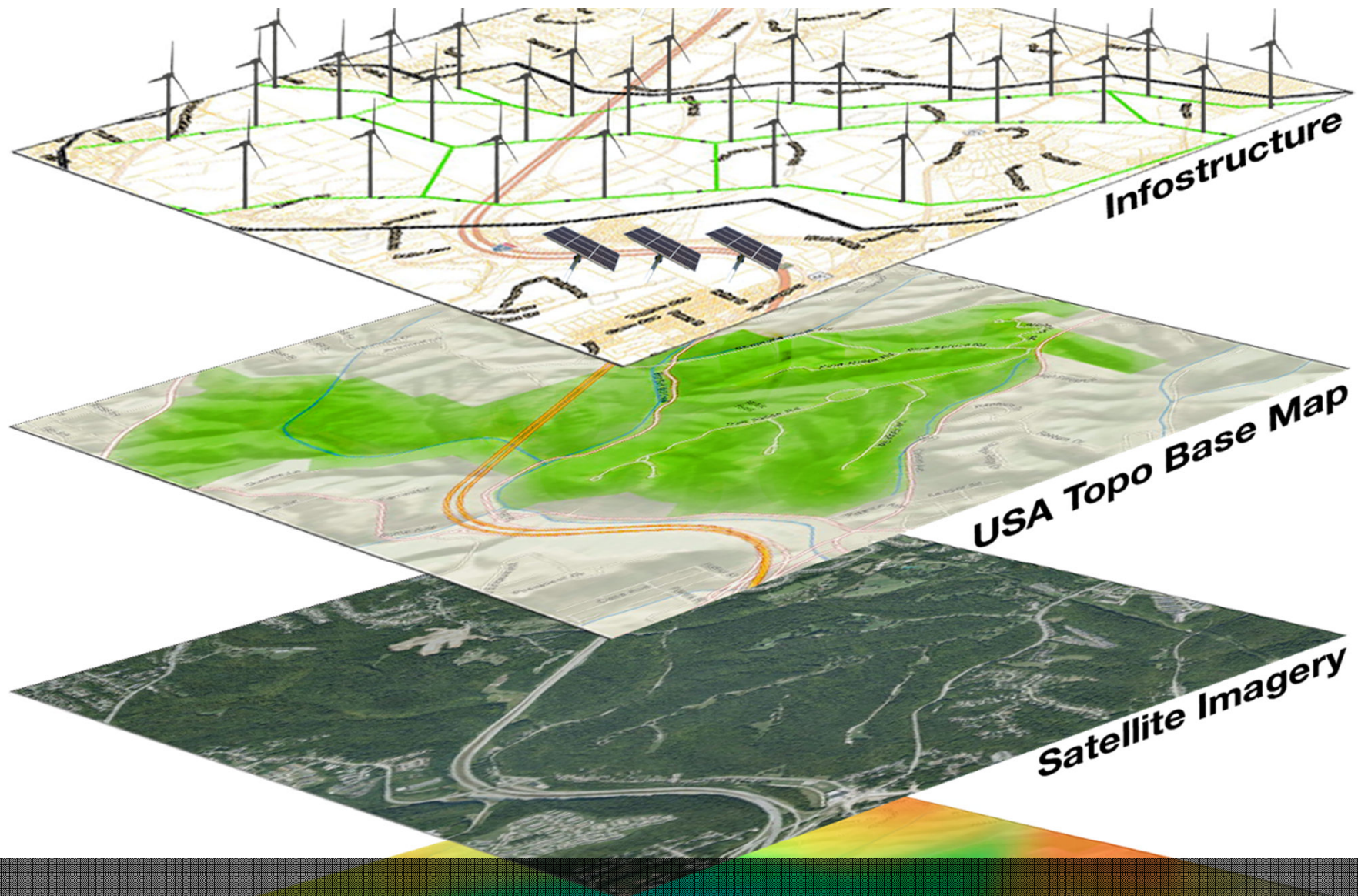


Benefits and limitations



Code extensions

Image source: Electrici-Tree by Vahakn Matossian



Layer manager


```

"types": [ "route" ],
"formatted_address": "7th Main Rd, Koramangala, Bengaluru, Karnataka 560034, India",
"address_components": [ {
  "long_name": "7th Main Rd",
  "short_name": "7th Main Rd",
  "types": [ "route" ]
}, {
  "long_name": "Koramangala",
  "short_name": "Koramangala",
  "types": [ "sublocality", "political" ]
}, {
  "long_name": "Bengaluru",
  "short_name": "Bengaluru",
  "types": [ "locality", "political" ]
}, {
  "long_name": "Bengaluru",
  "short_name": "Bengaluru",
  "types": [ "administrative_area_level_2", "political" ]
}, {
  "long_name": "Karnataka",
  "short_name": "Karnataka",
  "types": [ "administrative_area_level_1", "political" ]
}, {
  "long_name": "India",
  "short_name": "IN",
  "types": [ "country", "political" ]
}, {
  "long_name": "560034",
  "short_name": "560034",
  "types": [ "postal_code" ]
} ],
"geometry": {
  "location": { "lat": 12.9259085, "lng": 77.6334715 },
  "location_type": "GEOMETRIC_CENTER",
  "viewport": {
    "southwest": { "lat": 12.9227118, "lng": 77.6301852 },
    "northeast": { "lat": 12.9290071, "lng": 77.6364805 }
  }
}

```

Storing layers in JSON format

```

"location": { "lat": 12.9247615, "lng": 77.6330486 },
"northeast": {
  "lat": 12.9269574,
  "lng": 77.6334715
}

```


CATCH ALL THE ERRORS!



Capture GPK messages

GraphicsLayer.FindGraphicsInHostCoordinates()

Custom controls (1)

Identify

▲ CO2_1-HR_1ST_J5_C0

37.6512184472883

Location: -13617742.7745911 4530300.326

Field	Value
Latitude	37.6512184472883
Longitude	-122.330081561039
Concentration	4
CarbonDioxide	9.7752
MeasuredDate	6/27/2011 11:00:00 AM
Average	1-HR
Rank	1ST

Identified 1 feature(s)

WKID: 102100 | 37.66°N 122.31°W



146%



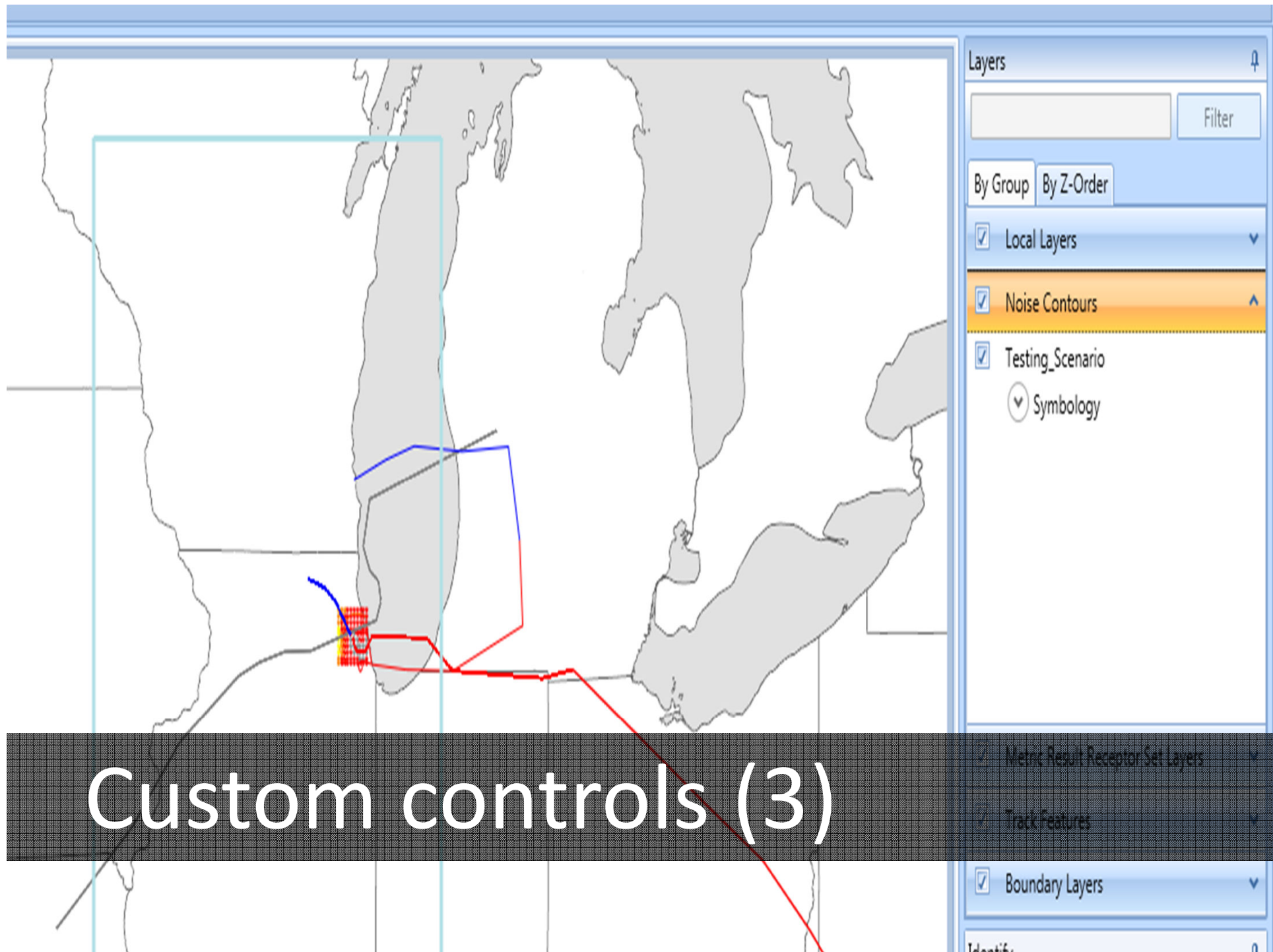


J5_C0 x

id drop it here to group by that column

Longitude	Concentration	CarbonDioxide	MeasuredDate	Average	Rank	
-122.381076024295	-1	0	1/1/0001 12:00:00 AM	1-HR	1ST	
-122.364075165851	-1	0	1/1/0001 12:00:00 AM	1-HR	1ST	
-122.347074308466	-1	0	1/1/0001 12:00:00 AM	1-HR	1ST	
-122.330073453812	-1	0.000424575	6/27/2011 11:00:00 AM	1-HR	1ST	
-122.381076024295	-1	0	1/1/0001 12:00:00 AM	1-HR	1ST	
-122.364075165851	-1	0	1/1/0001 12:00:00 AM	1-HR	1ST	
-122.347074308466	-1	0	1/1/0001 12:00:00 AM	1-HR	1ST	

Custom controls (2)



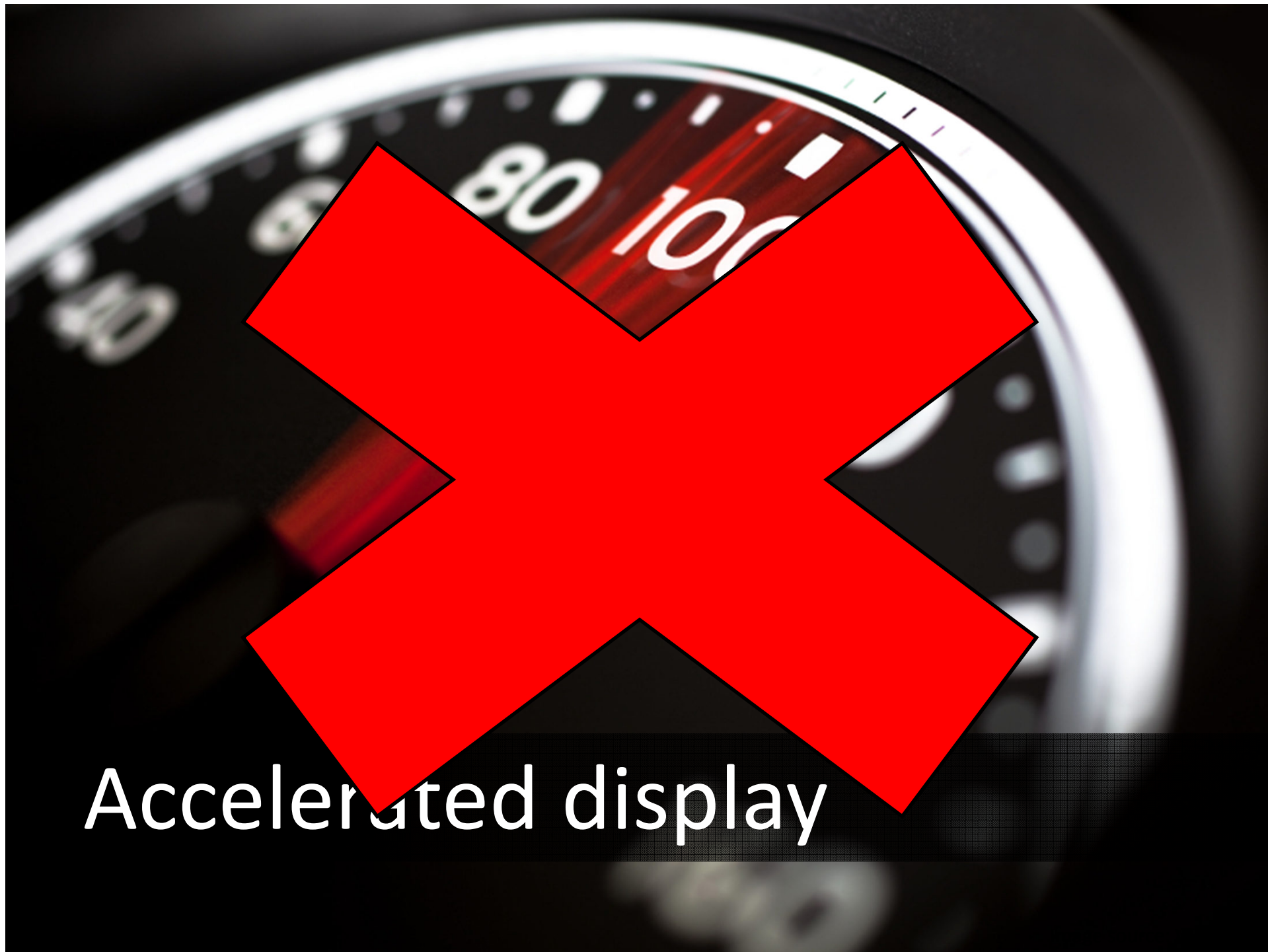


Helpful Tips

Tips and tricks



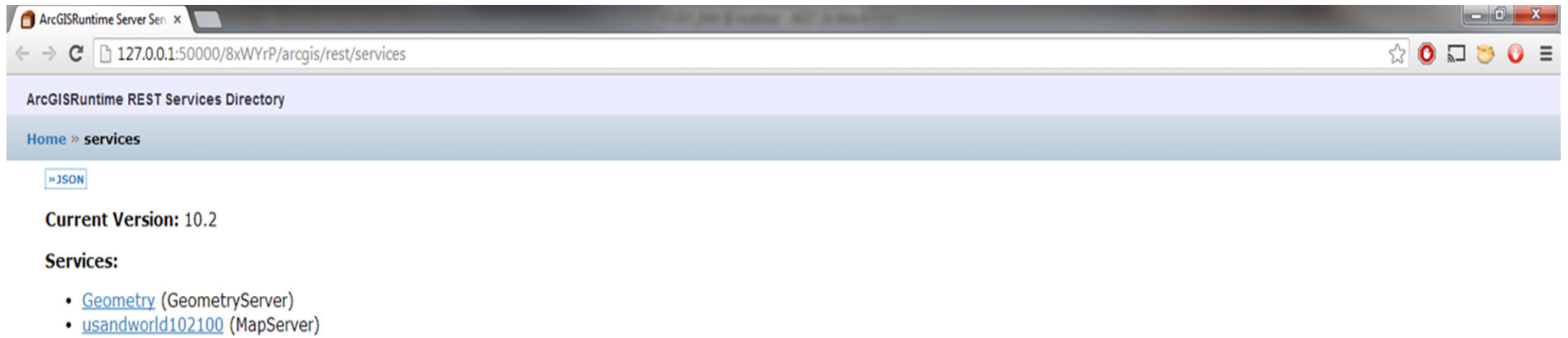
Accelerated display



Accelerated display



Manage Runtime folders



Display Runtime services

Managed Extensibility Framework (MEF)

.NET Framework 4.5 | Other Versions ▾ | 62 out of 71 rated this helpful - [Rate this topic](#)

This topic provides an overview of the Managed Extensibility Framework introduced in the .NET Framework 4.

This topic contains the following sections.

- What is MEF?
- The Problem of Extensibility
- What MEF Provides
- Where Is MEF Available?
- MEF and MAF
- SimpleCalculator: An Example Application
- Composition Container and Catalogs
- Imports and Exports with Attributes
- Further Imports and ImportMany
- Calculator Logic
- Extending SimpleCalculator Using A New Class
- Extending SimpleCalculator Using A New Assembly
- Conclusion
- Where Do I Go Now?

What is MEF?

The Managed Extensibility Framework or MEF is a library for creating lightweight, extensible applications. It allows application developers to discover and use extensions with no configuration required. It allows developers easily encapsulate code and avoid fragile hard dependencies. MEF not only allows extensions to be reused within applications, but across applications as well.

The Problem of Extensibility

Migrate to Runtime using MEF

The simplest approach to the problem is to include the components as source code in your application and call them directly from your code. This has a number of obvious drawbacks. Most importantly, you cannot modify the components without modifying the source code, a restriction that might be acceptable in, for example, a Web application, but is unworkable in a client application. Equally problematic, you may not have access to the code for the components, because they might be developed by third parties, and for the same reason you cannot allow them to access yours.

A slightly more sophisticated approach would be to provide an extension point or interface, to permit decoupling between the application and its components. Under this model, you might provide an interface that a component can implement, and an API to enable it to interact with your application. This solves the problem of requiring source code access, but it still has its own difficulties.



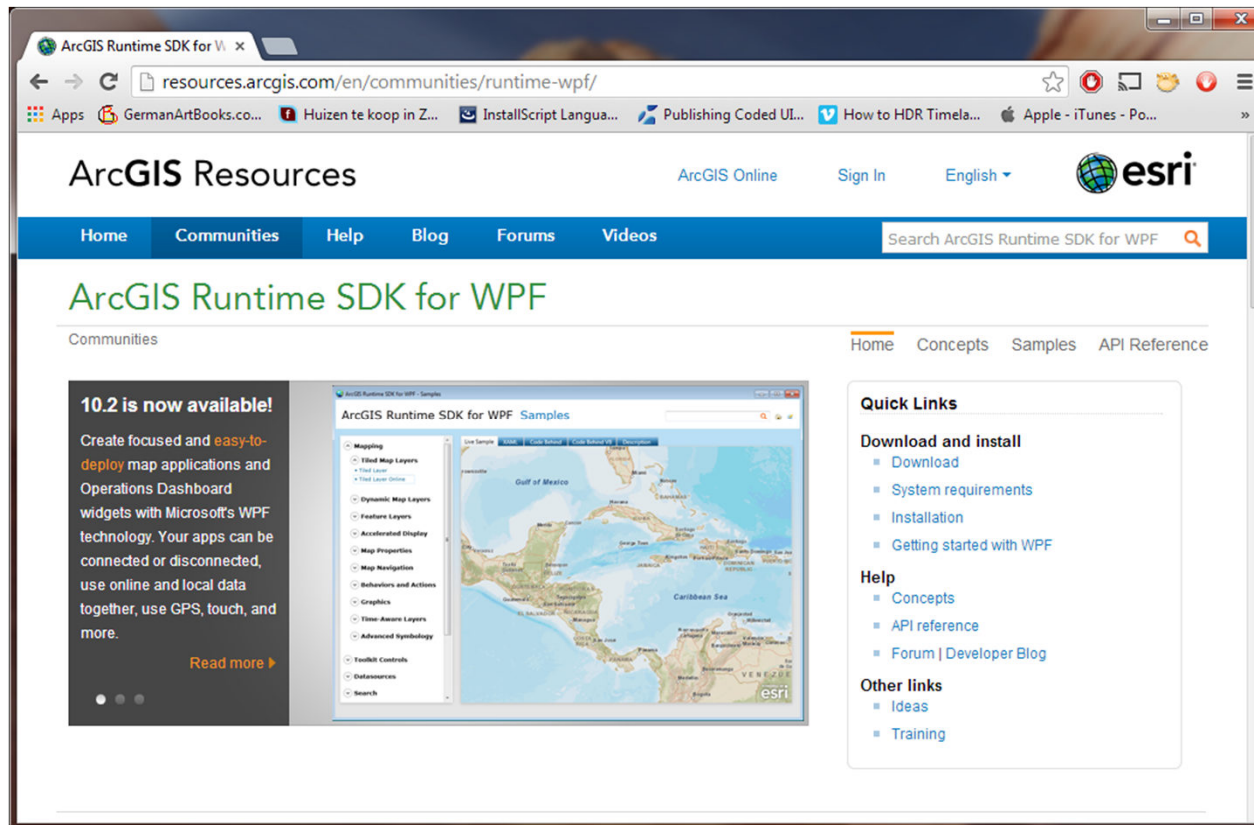
Working wit Python scripts



Tools

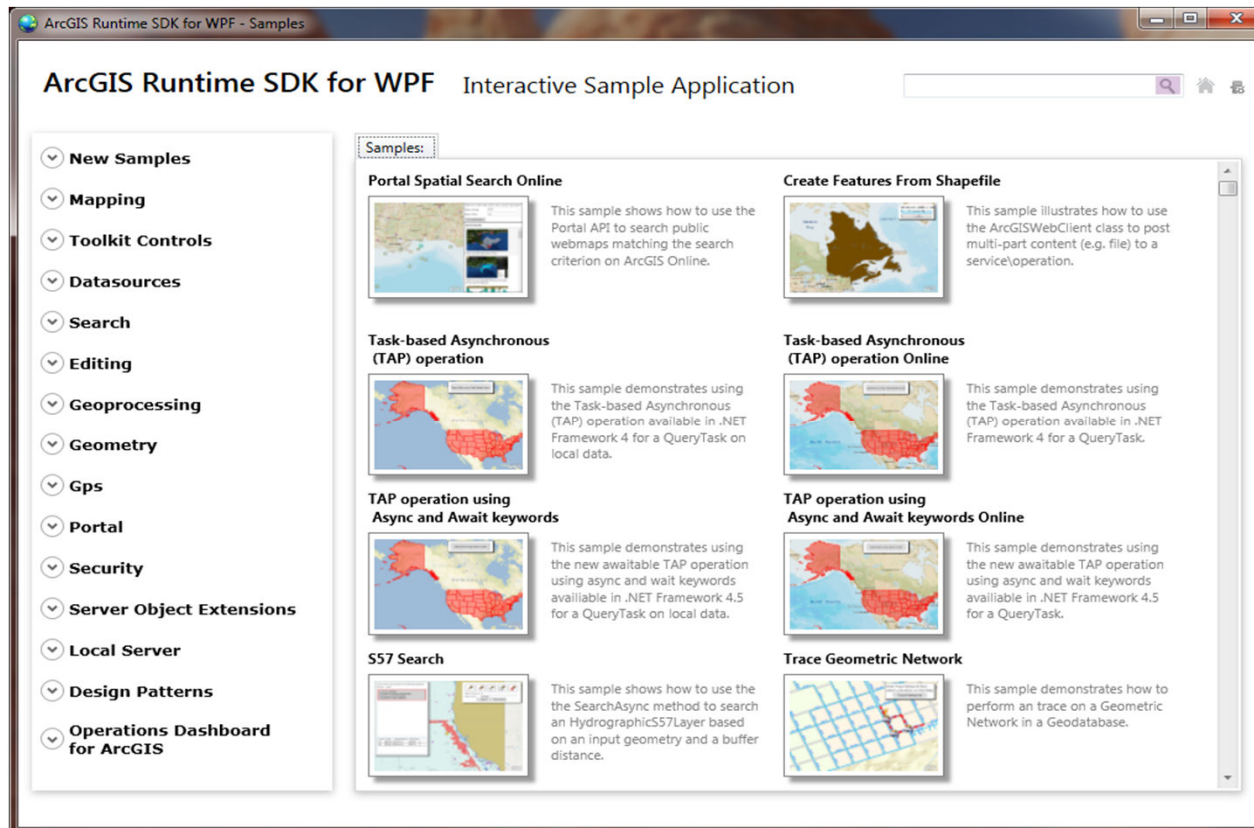
A high-angle, close-up photograph of a red running track. The track is marked with white lines and numbers. The numbers 2, 3, 4, 5, and 6 are visible, indicating the lanes. The track is curved, and the perspective is from above, looking down at the lanes. The text "Getting started" is overlaid on the bottom left of the image.

Getting started

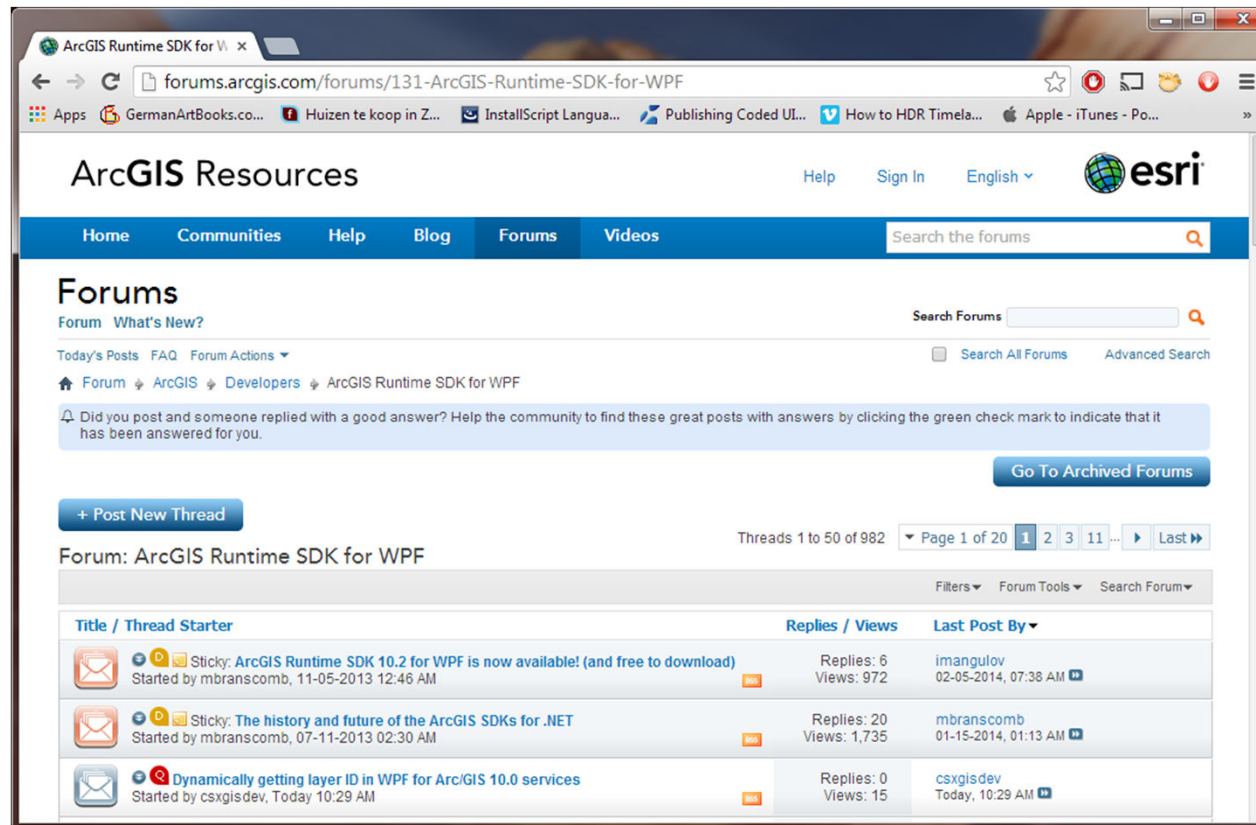


<http://resources.arcgis.com/en/communities/runtime-wpf/>

Get the FREE! SDK

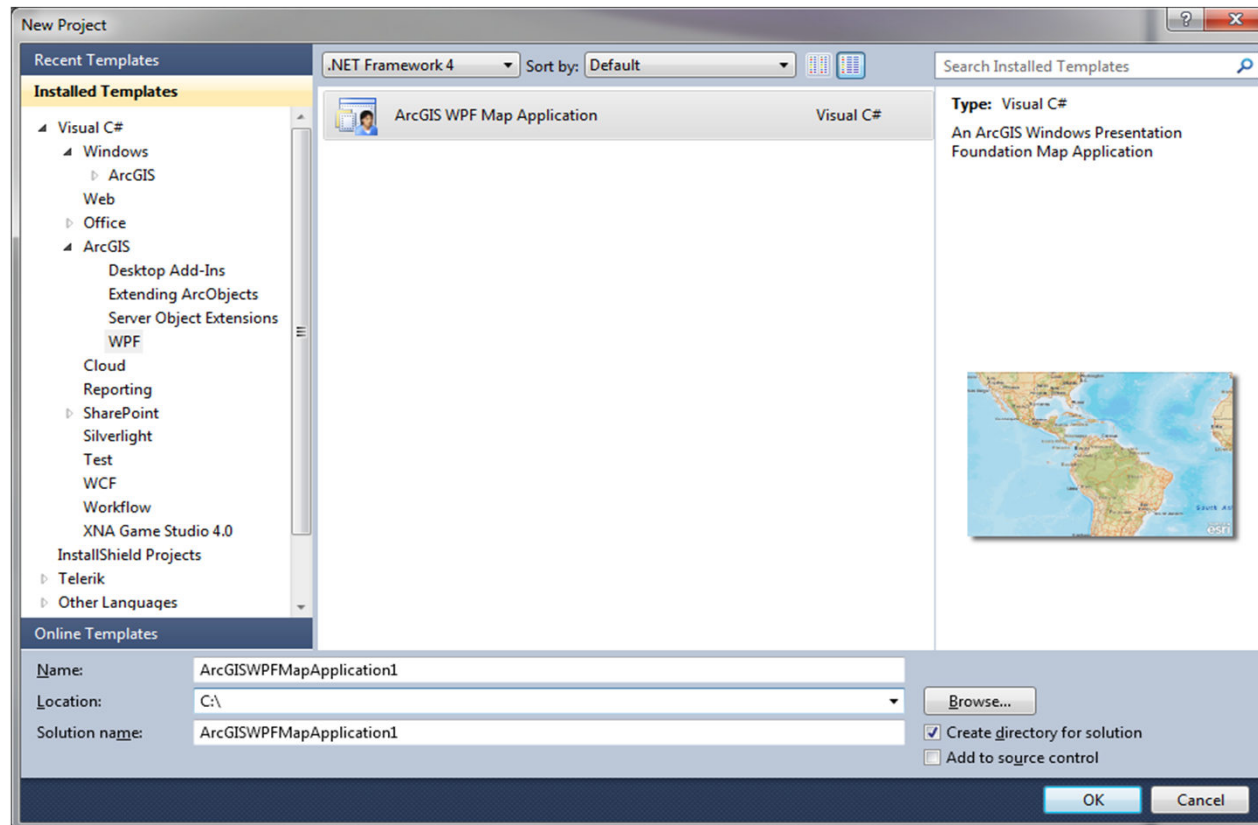


Runtime sample application



<http://forums.arcgis.com/forums/131-ArcGIS-Runtime-SDK-for-WPF>

Runtime forum



Visual Studio template

A green highway sign with a white border, mounted on a blue metal post. The sign has the text 'The Future' in large white letters, 'NEXT EXIT' in smaller white letters, and a white arrow pointing up and to the right. The sign is set against a blue sky background.

The Future

NEXT EXIT



Future of Runtime

bkuiper@foliage.com

@bjornkuiper

<http://bjorn.kuiper.nu>

Contact

The End

Additional supporting slides

Fiddler

- <http://www.telerik.com/fiddler>

PyScripter

- <https://code.google.com/p/pyscripter/>

Tools

Gpk Status Log

NoiseContourLoader (2014/03/12 05:47:14)

Executing (Contour): Contour 55;60;65;70;75 41.81176675699 -88.1272662950196 C:\AEDT\Temp\5j3chxfo.txt 1 0.0002

Start Time: Wed Mar 12 05:47:14 2014

Executing (Contour): Contour 55;60;65;70;75 41.81176675699 -88.1272662950196 C:\AEDT\Temp\5j3chxfo.txt 1 0.0002

Start Time: Wed Mar 12 05:47:14 2014

Executing: Contour 55;60;65;70;75 41.81176675699 -88.1272662950196 C:\AEDT\Temp\5j3chxfo.txt 1 0.0002

Start Time: Wed Mar 12 05:47:14 2014

Running script Contour...

Start

Version: 1.0.2013.04.01

+ scratch workspace: c:\aedt\arcgisruntime\arcgisruntime_10224\contour\jobs\contour_gpserver\j47e24c6f1cc4be8b48bb0995de92c04\scratch

+ scratch.gdb workspace: c:\aedt\arcgisruntime\arcgisruntime_10224\contour\jobs\contour_gpserver\j47e24c6f1cc4be8b48bb0995de92c04\scratch\scratch.gdb\

Input parameters

+ contour_values: 55;60;65;70;75

+ latitude: 41.81176675699

+ longitude: -88.1272662950196

+ input_file: C:\AEDT\Temp\5j3chxfo.txt

+ isInm: 1

+ resolution: 0.0002

+ output_contour: c:\aedt\arcgisruntime\arcgisruntime_10224\contour\jobs\contour_gpserver\j47e24c6f1cc4be8b48bb0995de92c04\scratch\scratch.gdb\contour

Running INM generation

Generate INM raster

Create INM spatial reference

+ result: %scratchFolder%\PROJCS['INM_Lambert_Conformal_Conic',GEOGCS['GCS_WGS_1984',DATUM['D_WGS_1984',SPHEROID['WGS_1984',6378137.0,298.257223563]],PRIMEM['Greenwich',UNIT['Degree',0.0174532925199433]],PROJECTION['Lambert_Conformal_Conic'],PARAMETER['False_Easting',0.0],PARAMETER['False_Northing',0.0],PARAMETER['Central_Meridian',-88.1272662950196],PARAMETER['Standard_Parallel_1',41.81176675699],PARAMETER['Standard_Parallel_2',41.81176675699]]

Generating contour

+ result: c:\aedt\arcgisruntime\arcgisruntime_10224\contour\jobs\contour_gpserver\j47e24c6f1cc4be8b48bb0995de92c04\scratch\scratch.gdb\raster

+ contour_values: 55;60;65;70;75

+ output_contour: c:\aedt\arcgisruntime\arcgisruntime_10224\contour\jobs\contour_gpserver\j47e24c6f1cc4be8b48bb0995de92c04\scratch\scratch.gdb\contour

Generate contour

Returning result

Finished

Completed script Contour...

Succeeded at Wed Mar 12 05:47:18 2014 (Elapsed Time: 4.29 seconds)

GPK Status log