

Microsoft .NET and the ESRI REST API

Making the Connection

– Chuck Wright, MCSD, GISP

- ESRI Certified Web developer
- President and Lead Developer, Mobile311, LLC
- Developed ESRI-based GIS Websites since 2001
- ArcGIS Server, ArcIMS, ArcView IMS, MS SQL Server2008

Presenter



- REST (Representational State Transfer)
Web API
- JSON (JavaScript Object Notation)
- .Net HttpWebRequest
- .Net HttpWebResponse
- .Net JavaScriptSerializer
- .Net Dictionary

The Players

```
http://server.arcgisonline.com/ArcGIS/rest/  
services/World_Street_Map/MapServer/  
Export?bbox=  
-20501426.0098134,  
-19971868.8804086,  
20501426.0098134,  
19971868.8804086  
&f=json
```

REST – An Example

```
{ "href" :  
  "http://services2.arcgisonline.com/arcgisoutput/_ags_map8ca90  
    e4d6f354c3790fe3e9f72c1163f.png",  
  "width" : 400,  
  "height" : 400,  
  "extent" : {  
    "xmin" : -20501426.0098134,  
    "ymin" : -20501426.0098134,  
    "xmax" : 20501426.0098134,  
    "ymax" : 20501426.0098134,  
    "spatialReference" : {  
      "wkid" : 102100  
    }  
  },  
  "scale" : 387427748.16305  
}
```

JSON – An Example

```
Dim newHttpRequest As System.Net.HttpWebRequest =  
    DirectCast(System.Net.WebRequest.Create(Uri), System.Net.HttpWebRequest)
```

```
newHttpRequest.Method = "GET"
```

```
Dim newHttpResponse As System.Net.HttpWebResponse =  
    DirectCast(newHttpRequest.GetResponse, System.Net.HttpWebResponse)
```

```
If newHttpResponse.StatusCode = Net.HttpStatusCode.OK Then
```

```
    Using myResponseStream As System.IO.Stream =  
        newHttpResponse.GetResponseStream
```

```
        Using myStreamReader As New IO.StreamReader(myResponseStream,  
            System.Text.Encoding.UTF8)
```

```
            returnValue = myStreamReader.ReadToEnd
```

```
        End Using
```

```
    End Using
```

```
End If
```

.Net HttpWebRequest / Response (Simple Version – VB.Net)

```
Dim newJavaScriptSerializer As New  
Script.Serialization.JavaScriptSerializer
```

```
newJavaScriptSerializer.MaxJsonLength = 1000000000
```

```
Dim valueObject As Dictionary(Of String, Object) =  
TryCast(newJavaScriptSerializer.DeserializeObject(value),  
Dictionary(Of String, Object))
```

OR

```
Dim valueArray() As Object =  
TryCast(newJavaScriptSerializer.DeserializeObject(value),  
Object())
```

.Net JavaScriptSerializer Processing the Result

```
If valueObject.ContainsKey("href") Then  
    Dim href As String= CStr(valueObject ("href"))  
End If
```

href will equal

"http://services2.arcgisonline.com/arcgisoutput/
_ags_map8ca90e4d6f354c3790fe3e9f72c1163f.p
ng"

.Net Dictionary


```
Dim newHttpRequest As System.Net.HttpWebRequest =  
    DirectCast(System.Net.WebRequest.Create(Url), System.Net.HttpWebRequest)  
  
newHttpRequest.Method = "GET"  
  
Dim newHttpWebResponse As System.Net.HttpWebResponse =  
    DirectCast(HttpWebRequest.GetResponse, System.Net.HttpWebResponse)  
  
If newHttpWebResponse.StatusCode = Net.HttpStatusCode.OK Then  
    Using myResponseStream As System.IO.Stream =  
        newHttpWebResponse.GetResponseStream  
        Using myStreamReader As New IO.StreamReader(myResponseStream,  
            System.Text.Encoding.UTF8)  
            returnValue = New  
                Drawing.Bitmap(myStreamReader.BaseStream)  
        End Using  
    End Using  
End If
```

Getting the Image

- Process the image
- Add additional graphics
- Return to the user

What's Next

- If it's in here:
 - <http://services.arcgisonline.com/ArcGIS/SDK/REST/index.html?export.html>
- You can get it with:
 - REST (Representational State Transfer) web API
 - JSON (JavaScript Object Notation)
 - .Net HttpWebRequest
 - .Net JavaScriptSerializer
 - .Net Dictionary

Conclusion

– cwright@mobile311.com

Questions?

