

Using Mapserver to Create an Internet Map

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Steps in brief

1. Create or edit .map and .html files using a text editor
2. Upload shapefiles needed, along with .map and .html files to your directory on the server
3. Test your application
4. Repeat steps 1-3 until successful

Steps in Detail

Create or edit .map and .html files using a text editor

Use some editor capable of creating text files. Microsoft Word® .doc files will NOT work, although if you choose the option to *save as* .txt files they will.

Below is a sample .map file for a basic map with one data layer. Note that everything following a # on a line is a comment and can be omitted

```
NAME northampton # set the map name to anything you like

# Set the extent to match YOUR shapefile(s)
# coordinates are Westernmost Southernmost Easternmost Northernmost
EXTENT 407997.812 4103475.750 443135.000 4157027.250
# here is an example for Lat/Lon.
#EXTENT -97.5 41.619778 -82.122902 49.38562

# can leave the font-set alone
FONTSET "/usr/local/etc/htdocs/mapserver/fonts/fonts.list"

# set the size of the Image to be displayed
SIZE 400 300

# Set the SHAPEPATH to point where you have stored your shapefiles
# substitute your user ID for YOUR_ID below.
# SHAPEPATH "/home/evsc468/public_html/YOUR_ID/"
# or point to shapefiles in some other directory
# In this example we'll share shapefiles stored elsewhere
SHAPEPATH "/usr/local/etc/htdocs/northampton/shapefiles/"

# you will need to customize the layer definitions for YOUR layers
# remember that the SHAPEFILES for the LAYERS should be stored in the
# directory pointed to by SHAPEPATH above.

# LAYER DEFINITIONS -----
LAYER
  NAME "myoutline"
  DATA outline
  STATUS DEFAULT # Show the layer at all times
  TYPE LINE # choices for type are POLYGON, LINE and POINT
  CLASS
    COLOR 0 0 0 # use black lines
```

```
    OUTLINECOLOR 0 0 0 # numbers represent brightness of Red, Green and Blue
END
END

END # end of map file
```

In the example above, there are several things to note. First you need to customize:

- **EXTENT** – make it match the extent of your shapefile, in whatever units are used in the shapefile
- **SHAPEPATH** – needs to point to where your shapefiles will be stored on the computer hosting mapserver. This can be in your “home” directory or in a subdirectory.
- **LAYER** – you will need to customize the layer information to be suitable for the layer(s) you are trying to display

The map file above produces the graphic:



It can be accessed using: http://atlantic.evsc.virginia.edu/cgi-bin/mapserv?map=/home/evsc468/public_html/jhp7e/basic.map&mode=map

Upload the Shapefiles, .map (and .html) files to the Server

You can use a variety of file transfer programs for moving your files to the server. The SecureFX (available to UVA students at: <http://www.itc.virginia.edu/desktop/central/>) program provide a more attractive interface.

Details:

- host: **atlantic.evsc.virginia.edu**
- user name **evsc468**
- Use the **SFTP** protocol
- password distributed in class
- You should create a subdirectory in the public_html/2007 directory under the main evsc468 directory based on your UVA User ID for your files.

Test Your Application

You can test your application by accessing the web page at:

http://www.VCRLTER.virginia.edu/cgi-bin/mapserv?map=/home/evsc468/public_html/2007/mst3k/basic.map&mode=map

Sorry this line is so long it wrapped, even with a smaller font. Substitute your user id for mst3k and your map file for basic.map. If we have an .html file we can omit the &mode=map option.

Sample Browsing Application

Sample MAP file – northampton.map

```
NAME northampton # set the map name to anything you like

# Set the extent to match YOUR shapefile(s)
# coordinates are Westernmost Southernmost Easternmost Northernmost
EXTENT 407997.812 4103475.750 443135.000 4157027.250
# here is an example for Lat/Lon.
#EXTENT -97.5 41.619778 -82.122902 49.38562

# can leave the font-set alone
FONTSET "/usr/local/etc/htdocs/mapserver/fonts/fonts.list"

# set the size of the Image to be displayed
SIZE 400 300

# Set the SHAPEPATH to point where you have stored your shapefiles
# substitute your user ID for YOUR_ID below.
# SHAPEPATH "/home/evsc468/public_html/YOUR_ID/"
# or point to shapefiles in some other directory
SHAPEPATH "/home/evsc468/public_html/jhp7e/shapefiles/"

# Set your template file to the name of YOUR template file
# you can leave the image path and image URL alone
WEB
  TEMPLATE "/home/evsc468/public_html/jhp7e/northampton_template.html"
  IMAGEPATH "/usr/local/etc/htdocs/tmp/"
  IMAGEURL "/tmp/"
END

LEGEND
  STATUS ON
  LABEL
    TYPE TRUETYPE
    FONT arial
    COLOR 0 0 0
    SIZE 10
    ANTI_ALIAS TRUE
  END
END
```

```

# you will need to customize the layer definitions for YOUR layers
# remember that the SHAPEFILES for the LAYERS should be stored in the
# directory pointed to by SHAPEPATH above.

# LAYER DEFINITIONS -----
LAYER
  NAME "myoutline"
  DATA outline
  STATUS DEFAULT # Show the layer at all times
  TYPE LINE # choices for type are POLYGON, LINE and POINT
  CLASS
#   NAME outline # if you leave out the name, the class does NOT show up in
the legend
  COLOR 0 0 0
  OUTLINECOLOR 0 0 0 # use black lines
  END
END

LAYER #
  NAME "mylandcover"
  DATA nhtm93s3
  STATUS OFF # show layer, but allow it to be turned off
  TYPE POLYGON # choices for type are POLYGON, LINE and POINT

  CLASSITEM "LANDCOVER"
  CLASS # water
    NAME "Water"
    EXPRESSION 'Water' # match only those where [landcover]='Water'
    COLOR 225 225 255
    OUTLINECOLOR 0 0 0
  END
  CLASS # grassland
    NAME "Grassland"
    EXPRESSION /Planted*/ # search for landcovers starting with Planted
    COLOR 0 240 0
    OUTLINECOLOR 0 0 0
  END
  CLASS # forest
    NAME "Forest"
    EXPRESSION /Forest*/
    COLOR 200 140 0
    OUTLINECOLOR 0 0 0
  END
  CLASS # salt marsh
    NAME "Salt Marsh"
    EXPRESSION /Salt*/
    COLOR 0 200 140
    OUTLINECOLOR 0 0 0
  END
  CLASS # sand
    NAME "Sand"
    EXPRESSION /Bare*/
    COLOR 240 240 240
    OUTLINECOLOR 0 0 0
  END
END # end of layer object

LAYER
  NAME "myroads"
  DATA rtf100k
  STATUS ON
  TYPE line

```

```

CLASS
  NAME Roads
  COLOR 200 0 200
  OUTLINECOLOR 0 0 0
END # end of class
END # end of layer object

END # end of map file

```

Sample TEMPLATE file – northhampton_template.html

```

<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML//EN">
<html>
  <head>
    <title>Northampton GIS</title>
    <script>
      //functions called from within the mapimage applet that allow us
      //to do box zooms and queries
      function mapplet_apply(name, minx, miny, maxx, maxy, redraw) {
        document.mapserv.imgbox.value = minx + " " + miny + " " + maxx + " " +
maxy;
        document.mapserv.imgxy.value = minx + " " + miny;
      }

      function mapplet_error(message) {
        alert(message);
      }
    </script>
  </head>

  <h3>Northampton GIS<br>
  <p>

    <form method="GET" action="/cgi-bin/mapserv">

      <input type="hidden" name="map" value="[map]">
      <input type="hidden" name="imgext" value="[mapext]">
        <input type="hidden" name="imgxy" value="199.5 149.5">
        <input type="hidden" name="savequery" value="true">
      <table border=1 cellpadding=3>
        <tr>
          <td align=center>
            <input type="image" name="img" src="[img]" border="0">
          </td>

          <td valign=top>
            <div align="center"><font size=+1 face=arial,Helvetica>Map
            Controls</font></div>
            <center>
            <input type=hidden name=mode value="browse">

            Select layers to display/query:<br>
            <select multiple name="layer">
            <option value="mylandcover" [mylandcover_select] > Land Cover</option>
            <option value="myroads" [myroads_select] > Roads</option>
            </select>
            <br>
            Set your zoom option:<br>
            <select name="zoom" size="1">

```

```

<option value="10" > Zoom in 10 times
<option value="8" > Zoom in 8 times
<option value="4" > Zoom in 4 times
<option value="3" > Zoom in 3 times
<option value="2" > Zoom in 2 times
<option value="1" selected > Recenter Map
<option value="-2" > Zoom out 2 times
<option value="-3" > Zoom out 3 times
<option value="-4" > Zoom out 4 times
<option value="-8" > Zoom out 8 times
<option value="-10"> Zoom out 10 times
</select>
<br>
<br>
<input type="submit" name="submit" value="Redraw/Query">
</center>

<hr>
<p align="center"><font face=arial,Helvetica><b>Legend</b></font><br>
  
</td>

</tr></table>
</form>

</body>
</html>

```

