Building a web mapping application with GeoExt

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Why GeoExt?
From web pages to web applications
Rich UI

Toolbars
Menu
Tree
Tab
Panel
Grid
Window
AJAX
Combo
Layout

GeoExt
ExtJS + OpenLayers = GeoExt

... not a revolutionary idea: MapFish, OpenGeo, MapGears, ExtMap, others...
PSC

• Bart van den Eijnden
• Tim Schaub
• Eric Lemoine
• Andreas Hocevar
• Cédric Moullet
Committers

- Andreas Hocevar
- Bart van den Eijnden
- Eric Lemoine
- Frédéric Junod
- Patrick Valsecchi
- Pierre Giraud
- Tim Coulter
- Tim Schaub
- * Sebastian Benthall
- * Bruno Binet
Licenses and Copyrights

• BSD License
• Copyrights to OSGEO
• Ext JS Dual Licensing (GPL3 or commercial)
Latest News?

• Release 0.6
  – More WMS and WFS readers
  – Synchronized grid & layer selection of features
  – More Layer Tree options (incl. drag-n-drop)
  – LegendPanel
  – Sliders

• Roadmap in discussion

• .... www.geoext.org
The Concept

- Ext JS is great for rich web applications, but lacks mapping
- OpenLayers is great for maps, but lacks a rich UI
- Put the OpenLayers map in an Ext panel
- Wrap OpenLayers objects in Ext data components
Create and show a window with a GeoExt.MapPanel

```javascript
new Ext.Window({
    title: "GeoExt in Action",
    height: 280, width: 450, layout: "fit",
    items: [{
        xtype: "gx_mappanel",
            layers: 'bluemarble'}),
        ]
    }],
    zoom: 1
}).show();
```
About and Around The MapPanel

• Content is an OpenLayers.Map
• Access layers through a LayerStore
• Add button controls through Actions
• Add anchored Popup windows
• Panel populates a ScaleStore
• Panel's items interact with the map (e.g. ZoomSlider)
Pimp the ZoomBar with a GeoExt.ZoomSlider
7+6 lines of code

Add 3 controls to the bottom bar using GeoExt.Action
24 lines of code

Show/set scale in a drop-down using GeoExt.ScaleStore
27 lines of code

Create and show an anchored GeoExt.Popup window
7 lines of code

Add 3 controls to the bottom bar using GeoExt.Action
24 lines of code

Show/set scale in a drop-down using GeoExt.ScaleStore
27 lines of code
Tree View For Layers

• Synchronized with map
• Control visibility and order of layers (drag & drop)
• Group layers with LayerContainers
• LayerParamNode for sub-layers (e.g. &LAYERS=sub1,sub2,sub3)
• Flexible configuration with Nodes and Loaders, mixable with other content
Data Access Components

• Treat OpenLayers Formats and objects like Ext JS remote data, using Readers and Stores
• The ProtocolProxy wraps OpenLayers Protocols as input for Readers
• 2-way synchronization between Stores and OpenLayers objects
Load remote WMS Capabilities into a GeoExt.data.WMSCapabilitiesStore

4 lines of code

Copy layer to the map's GeoExt.data.LayerStore

11 lines of code

GeoExt.data.LayerStore shared between map and tree node

1 line of code
Selection synchronized between layer and grid using GeoExt.grid.FeatureSelectionModel

Get remote features (GeoJSON) using GeoExt.data.ProtocolProxy

GeoExt.data.FeatureStore shared between vector layer and grid

1 line of code

Selection synchronized between layer and grid using GeoExt.grid.FeatureSelectionModel

5 lines of code

8 lines of code