- GIS/Geo/Location/OSM..
- Packaging in Debian
- Debian pure blend
- Debian packages
- Small community
- GIS/Geo/Location/OSM..
- Live Disk/USB/VM
- based on Lubuntu
- Documentation
- Workshops
- Large community (upstream, documentation, translation, ...)

OSGeoLive
My Talk

• GIS / Geo – what why how
• OSGeo Live – Debian GIS in detail
- GIS/Geo/Location/OSM...
- Packaging in Debian
- Debian pure blend
- Debian packages
- Small community

- GIS/Geo/Location/OSM...
- Live Disk/USB/VM
- based on Lubuntu
- Documentation
- Workshops
- Large community (upstream, documentation, translation, ...)

(debian)
What is this GIS/geo stuff about?

Data & Software
Data: Open Streetmap

OpenStreetMap is a map of the world, created by people like you and free to use under an open license.
OSM in Debian GIS

• JOSM is an extensible editor for OpenStreetMap (OSM) written in Java 7.

• Others: osmosis, routino, ...
Aerial photographs/satellite imagery
Why is the 'straight line' path across continent so curved?

This is the result of mapping the straight line path from a point in US to Poland using Distance Measurement Tool.

Also, planes from Asia to US would travel almost over North Pole.

Why is the path so curved? I agree that this is a flat representation of a sphere, so I do expect some arc, but I don’t think earth has this much curvature.

What am I missing here?
Spatial Database

- **PostGIS** – spatially enabled database
  
  ```sql
  SELECT census.*, customers.*
  FROM census JOIN customers ON 
  ST_Contains(census.geom, customers.geom);
  ```
Desktop GIS: QGis
Standard Services

Show rendered maps
- Web Mapping Services (WMS)
- Geoserver
- Mapserver (d)
- TinyWMS (d)

Search for data/metadata
- Catalog Service for Web (CSW)
- Geonetwork
- PyCSW (d)

Download Service
- Web Feature Service (WFS)

OGC®
Making location count.
www.opengeospatial.org
Web mapping (javascript)

- Leaflet, OpenLayers and Cesium (3D)
Web Mapping
Documentation

OSGeo-Live 8.0 Contents

Desktop GIS

General GIS viewing, editing, and analysis on the desktop:

- QGIS - [QuickStart]
- GRASS GIS - [QuickStart]
- gvSIG Desktop - [QuickStart]
- User-friendly Desktop Internet GIS (uDig) - [QuickStart]
- Kosmo Desktop - [QuickStart]
- OpenJUMP GIS - [QuickStart]
- SAGA - [QuickStart]

Browser Facing GIS

General GIS viewing, editing and analysis in the browser:

- OpenLayers - [QuickStart] - Browser Mapping Library
- Leaflet - [QuickStart] - Mobile Friendly Interactive Maps
- Geomajas - [QuickStart] - Browser GIS Client
- Mapbender - [QuickStart] - Geoportal Framework
- GeoMoose - [QuickStart] - Web GIS Portal
- Cartaro - [QuickStart] - Geospatial CMS
OSGeo live

• Live disk
  – Demo datasets
  – Quickstarts
  – Applications
• Education
• Handed out as Open Source GIS events
  – >25 in 2014
• Often used in workshops
• 68% of downloads are Windows users
OSGeo live under the hood

- Based on Lubuntu LTS
- 2 releases /year
- **Coordination**
  - Weekly meetings on IRC
  - Project Manager
- Documentation using *Sphinx*
- Packaging in a *PPA*
- Install scripts

http://trac.osgeo.org/osgeo/browser/livedvd/gisvm/trunk

svn checkout https://svn.osgeo.org/osgeo/livedvd/gisvm/trunk
Install scripts

People Do install OsGeo Live on Desktops and Servers
Packaging in UbuntuGIS

- UbuntuGIS/Unstable
  - 30000+ downloads of GDAL library
- Up to one year ago more up-to-date than Debian unstable + with more contributors
The goal of the DebianGis project is about improving Debian to make it the best distribution for Geographical Information Systems applications and users.

- Most important libraries packaged
- Many important applications packaged
Why is xxx not in Debian (GIS)

- Often Non-free files
  - Typical for scientific software (free for non-commercial use)
  - OGC documents
  - Projection definitions

- Nobody answered my questions
- Hard to find a sponsor
- New processing / freeze takes a long time
- Transitions take a long time
  - GDAL
- Many packaging guides/styles out there – not easy to pick the right one
- Dependencies are missing
  - Java

- It takes time
  - Often too much time for upstream

Suggestions for different licenses?
Debian GIS blend

- Typical issues also encountered in Debian Med and Debian Science
- Specialised software has a comparatively small user base
- Non-programmers

A Debian Pure Blend is a Debian *internal* project which assembles a set of packages that might help users to solve certain tasks of their work.
Issues of Debian (GIS)

- Often Non-free files
  - Typical for scientific software (free for non-commercial use)
  - OGC documents
  - Projection definitions
  - Suggestions for different licenses?
- Nobody answered my questions ==> Responsive team
- Hard to find a sponsor ==> Sponsoring of Blends (Andreas Tille)
- New processing / freeze takes a long time
- Transitions
  - GDAL
- Many packaging guides/styles out there ==> Debian GIS policy
- It takes time
- ==> Too much work for upstream
Debian GIS policy

Starting a new package

When the upstream sources are distributed as compressed tar archives (tar.gz, ...):

```bash
mkdir <package>
cd <package>
git init
git import-orig --pristine-tar ../package_version.orig.tar.gz
git clone git://git.debian.org/git/pkg-grass/package_template.git
mv package_template/debian/ .
rm -rf debian/.git/package_template/
```

The above steps will create a repository with the appropriate layout for **git-buildpackage**, with three branches:

- **master**, where the Debian development will happen,
- **pristine-tar**, used by the **pristine-tar** tool during the package build process to recreate the original tarball, and
- **upstream**, which will contain the upstream source.

Additionally the content of the debian/ directory is taken from the Debian GIS package template.

Change the placeholders in the files under the debian/ directory for the package in question following the requirements documented in the Policy section, and you can start building the package.

Working with existing packages

When the package is already in the Debian archive, you can use the **debcheckout** command with its --git-track='*' option.

```bash
debcheckout --git-track='*' <package>
```

To update the master, upstream and pristine-tar branches from an existing clone at once, use the **gbp-pull** command.
A **Debian Pure Blend** is a Debian internal project which assembles a set of packages that might help users to solve certain tasks of their work. The list on the right shows the tasks of Debian GIS.

---

**Tasks page**

This is a list of the Tasks Debian GIS is made of:

**Data - Debian GIS data**
This metapackage will install some packages providing data that can be used by different GIS applications.

**Development - Geographic Information Systems (GIS) development**
This task sets up your system for GIS development.

**Gps - GPS related programs**
Set of Debian packages which are dealing with GPS devices and data.

**Openstreetmap - OpenStreetMap related programs**
Set of Debian packages which are dealing with OpenStreetMap data.

**Remote sensing - Remote sensing and earth observation**
Debian packages which are dealing with Remote Sensing (for instance Synthetic Aperture Radar -- SAR) processing (interferometry, polarimetry, data visualization, etc) and earth observation.

**Statistics - Statistics with geographical data**
Set of Debian packages which are useful for doing statistics with geographical data.

**Map server - Present geographic information via web map server**
Debian packages which are dealing with geographical information to be presented for the web on so called map tile servers. These are pretty useful when trying to setup an OpenStreetMap tile server but not restricted to OpenStreetMap data only.

**Workstation - Geographic Information Systems (GIS) workstation**
This task sets up your system to be a GIS workstation to process geographical information and make maps.
- Since last year: many new contributions
- Many packages updated – also old packages
  - Qgis, GDAL, GRASS have recent version in jessie
- Many NEW packages
- Still we could use help....
- Still Few DD's and uploaders
- More upstream involvement
- Documentation
- Java
# Debian GIS Workstation packages

## Official Debian packages with high relevance

### Avce00
**Conversion of ESRI Arcinfo Vector Coverage in E00 format**
http://avce00.maptools.org/avce00/
Maintainer: Debian GIS Project (Johan Van de Wauw)

Avce00 is a C library and group of tools that makes Arcinfo (binary) vector coverages appear as E00. It allows you to read and write binary coverages just as if they were E00 files.

**License:** DFSG free

### E00compr
**A program to read/write Arcinfo compressed E00 files**
http://avce00.maptools.org/e00compr/
Maintainer: Debian GIS Project (Francesco Paolo Lervigotto)

E00compr is an ANSI C library that reads and writes Arcinfo compressed E00 files. Both "PARTIAL" and "FULL" compression levels are supported. E00 files are the vector import/export format for Arcinfo. It is plain ASCII and is meant as an interchange format. ESRI considers the format to be proprietary, so this package may not read all E00 files as ESRI may change the format.

This package is useful for importing E00 files into the grass GIS system. It contains the e00conv command-line program, which takes an E00 file as input (compressed or not) and copies it to a new file with the requested compression level (NONE, PARTIAL or FULL). The library is not included at this stage.

**License:** DFSG free

### Earth3d
**Map client displaying a 3D model of the world**
Maintainer: Petter Reinholdtsen (Luk Class)

The map data is fetched from a server on the net, and the client will display recent satellite images and map data.

**License:** DFSG free

---

**Summary**

**Workstation**

*Geographic Information Systems (GIS) workstation*

This task sets up your system to be a GIS workstation to process geographical information and make maps.

The list to the right includes various software projects which are of some interest to the Debian GIS Project. Currently, only a few of them are available as Debian packages. It is our goal, however, to include all software in Debian GIS which can sensibly add to a high quality Debian Pure Blend. For a better overview of the project's availability as a Debian package, each head row has a color code according to this scheme:

- **Official Debian packages with high relevance**
- **Official Debian packages with lower relevance**
- **Debian packages in contrib or non-free**
- **Debian packages in experimental**
- **Debian packages in New queue (hopefully available soon)**
- **Packaging has started and developers might try the packaging code in VCS**
- **No known packages available but some record of interest (WNPP bug)**
- **No known packages available**

If you discover a project which is of interest, please add the project to the list!
• OsGeo live test sprint: next weekend 5-7/2
• Debian GIS meeting *after this talk*

Debian-gis@lists.debian.org
https://wiki.debian.org/DebianGis

live-demo@lists.osgeo.org
http://live.osgeo.org/