# Implementation and Migration Plan

By Huy Eng on 11 Jan 2015

This Implementation and Migration Plan has been developed to how the Migration of previous ODC server will be implemented to the new hosting server platform, and who will respond to each task.  The purpose of this planning is to ensure a successful migration of WP and Geoserver.

Noted: The time frame to complete this process can be changed as it is based on factors such as the size of the website/database, the internet speed, or download limitations set by your old host.

**Preparing the current server**

Before migrating, clean up the current server by removing the files, backups and email accounts, and others that are no longer using. This makes the server as lean as possible during the migration.

**Make Transfer**

1. **Make a full WordPress Transfer**

Migration WordPress from one hosting provider to another is not quite difficult. However, migration a normal WordPress to WordPress Multisite will face some challenges, especially transferring the site to the subdomain of Network. As ODC has a lot of the contents, tags and taxonomies, the export tool provided by WP is not helpful. However, there is another method that I thought that it will be more effective than, I need to test it first in localhost before work on the server. Below are the following typical steps to do that I hope that it will perform properly.
- Backup Database and Directories
- Setup the WordPress Multisite
    - o First, install WordPress Multisite, and setup sub domains for country site.
    - o Install the plugins as need
- Transfer Directories On Existing Server:
    - o wp_content
    - o public_html/Download
    - o public_html/References
- Migrate WordPress Database for subdomain (Don't not replace to database of OD Multisite)
- Reconfigure WordPress in new server in need
- Convert the qTranslate setting to mqtranslate
- Test and Review website, go live
- Ensure that data is consistent between the servers after migration

**In case, the domain name and Urls are required changed**

When the domain name or URLs change there are additional concerns.  The files and database can be moved, however references to the old domain name or location will remain in the database, and some pages or posts can cause issues with links or display. Thus, we need to replace the Urls in database and php files. This will be take time relies on how many contents and files are.

**After migration, we need to make sure that:**
- The data that must be consistent between the servers.
- Synchronize the data from old site to new site whenever there some updating
- Identify strategies and tools to help compare data on the two servers.

## 2. Migrate Geoserver to the New Server

ODC Geoserver is still running version **2.3.5**., while the stable versions of Geoserver were released up to 2.6.1 on November 16, 2014. If we can upgrade the version of ODC Geoserver to the latest version, it would be grate. However, upgrading version of Geoserver required different steps between versions to versions. Moreover, there is no the document to guide how to migrate Geoserver from 2.3.x to 2.6.x. Further information, you can read these links:
http://docs.geoserver.org/latest/en/user/installation/upgrade.html
http://docs.geoserver.org/latest/en/user/datadirectory/migrating.html

To migrate Geoverser to new system, first, installing new Geoserver on the new hosting. Then, migration the data directory from old server. Look at this link for the structure of the Data Directory of Geoserver that is essentially all need to migrate,
http://docs.geoserver.org/latest/en/user/datadirectory/index.html.
There is an additional data directory located in public_html/geoserver_data that need to migrate too.

Most of ODC map layers have been published from data source where are located in Mysql Database that same database of WordPress. However, there are serveral data sources of map layers are stored in Postgres SQL Database as they were not able to store into Mysql Database due of the file size problem. The database in postgres named "odc_db_dev" need to backup and migrate.

**Noted**, Geoserver is connected to the database, so changing database name and user, it will affect to Geoserver.

**Migration Planning**

| Task List | Description | Start Date | Dur ati on | Person |
|---|---|---|---|---|
| **Preparing For Migration** | | | | |
| Cleaning up:<br>- Directories/files<br>- Old backup files<br>- Old data<br>- Email Accounts | Identify and clean any files, email accounts or other assets that are no longer need. | 13/Jan /2015 | | Huy Eng |

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|---|---|---|---|---|
| Backup:<br> - wp_content<br> - public_html/Download<br> - public_html/References<br> - public_html/geoserver_data<br> - opt/apps/apache-tomcat-7.0.42/webapps/ geoserver/WEB-INF/lib<br> - /usr/NGL3/apache-tomcat-6.0.32 /webapps/newgenlibctxt /CatalogueRecords<br> - /usr/NGL3/BookCovers<br><br> - Database:<br>   ○ Mysql DB: devnet_odc_database<br>   ○ Postgres DB: odc_db_dev<br>                   newgenlib<br>   …<br><br> - Email Account/Mail Inbox:<br>   ○ info@opendevcam.net<br>   ○ contact@opendevcam.net<br>   ○ library@opendevcam.net<br>   ○ recruitment@opendevcam.net<br>Contact Dear to make sure that we have email server on the new server.<br>Suggestion to use Google Apps. just 4 mailboxes would be cheaper | Discuss with Dear or Team for backup strategy to back up the all listed directories, databases and email inbox accounts to the new server. | 14/Jan / 2015 | | Tin |

**Make Transfer**

**1. Make a full WordPress Transfer: detail of WP migration at below page**

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|---|---|---|---|---|
| Testing locally migration wp to wp multisite | Researching and testing for an effective method to migrate wp to wp network. | 14-15/ Jan/20 15 | | Huy Eng |
| Setup the WordPress Multisite<br>*Everything should converted before moving to new server<br> - define('SUBDOMAIN_INSTALL', true); | Coordinate with Dear to Install WordPress Multisite, and | 15-16/ Jan/ 2015 | | Tin/Dear |

| | | | | |
|---|---|---|---|---|
| - define('DOMAIN_CURRENT_SITE', 'web_address');<br>- Create sub 5 networks as subdomain<br>- Install some needed plugins<br>  o ~~qTranslate~~<br>  o mqTranslate<br>  o Catch website?<br>  o wpckan<br>  o Magic Field?<br>  o spam?<br>Read this for installation the Network Site http://codex.wordpress.org/Create_A_Network<br>https://github.com/OpenDevelopmentMekong/odm-frontend (plugins/themes included as submodules http://www.git-scm.com/book/en/v2/Git-Tools-Submodules) | create sub domains for country sites. Discuss with team for necessary plugins that required to use. | | | |
| Transfer all files/directories to the new server.<br>- Media: wp-content/upload<br>- Magic Field files: wp-content /files_mf<br>- Referent files: public_html/References<br>- Download files: public_html/Download | Upload files/directories to the new server. As new site is network site, so those files/directories need to store in the folder of site ID. Do not replace the directories of WP Multisite Network.<br>**Here are the storing locations:**<br>**/ODC/wp-content/uploads/site/ID_site**<br>**or**<br>**/wp-content/blogs.dir/ID_site/files/** | 16-18/ Jan/2 015 | | Tin, Dear, Huy Eng |

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| | I will identify the localtion exactly after testing of migration in local. | | | |
| Migrate ODC WordPress Database<br>- DB name: devnet_odc_database<br>  o Migrate WordPress tables which have wp_ to new database.<br>Read Detail below of the page:<br>Title:Migrate ODC WordPress Database | This database not only stores WordPress data but also spatial data as data sources of Geosever.<br>Firstly, just import the basic wp_ tables to the new database to the right tables of the sub sites based on their ID. Eg. Wp_2_posts.<br>DO NOT replace to the tables of main site. | 16/Jan/2015 | | Tin<br>Dear<br>Huy Eng |
| Reconfigure WordPress in new server | Edit:<br>wp-config.php<br>Or wp_options if needed. | 19 Jan 2015 | | Huy Eng, Tin |
| Convert the qTranslate contents to mqtranslate | | 19 Jan 2015 | | Huy Eng Tin |
| If the URL of site is changed:<br>For example: change old url ot new url:<br>opendevelopmentcambodia.net<br>cambodia.opendevelopmentmekong.net | Changing the site url requires to replace the links of images and | 19-20 Jan 2015 | | Huy Eng Tin |

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| | posts in database and template files. (This script help search and replace database on wordpress https://interconnectit.com/products/search-and-replace-for-wordpress-databases/) | | | |
| Test and Review website, go live Proteus need documentation for sanity checklist at https://wiki.proteus-tech.com/projects/MeKong | To ensure that the website work properly. | 19/Jan/2015 | | Huy Eng Tin Team |
| After migration:<br>- Identify strategies and tools to help compare data on the two servers.<br>- The data that must be consistent between the servers.<br>- Synchronize the data from old site to new site whenever updated<br>- Archive the entire migrated contents into CKAN (Alex) #ACTION: Alex will think about a solution for archiving old WP content into CKAN so it can be integrated and automated within Proteus' deployment scripts.<br>- Consider the downtime for current ODC site (discuss with Terry) | | ? | | ? |
| **Migrate Geoserver to the New Server** | | | | |
| Install Geoserver on New hosting (2.6.1) Install PostGIS (2.1) Install Gdal The other plugins request from Mappers: - Vector Data Sources | Discuss with the team, what version of Geoserver need to install, the | 13 Jan 2015 | | Tin, Alex, Dear, Mishari, Huy Eng |

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| H2 - H2 Embedded Database<br>H2 (JNDI) - H2 Embedded Database (JNDI)<br>MySQL - MySQL Database<br>MySQL (JNDI) - MySQL Database (JNDI)<br>Oracle NG (JNDI) - Oracle Database (JNDI)<br><br>- Raster Data Sources<br>AIG - Arc/Info Binary Grid (AIG) Coverage Format<br>DTED - DTED Coverage Format<br>ECW - ECW Coverage Format<br>EHdr - EHdr Coverage Format<br>ENVIHdr - ENVIHdr Coverage Format<br>ERDASImg - Erdas Imagine Coverage Format<br>ImagePyramid - Image pyramidal plugin<br>JP2ECW - JP2K (ECW) Coverage Format<br>JP2K (Direct) - JP2K (Direct) Coverage Format<br>JP2MrSID - JP2K (MrSID) Coverage Format<br>MrSID - MrSID Coverage Format<br>NITF - NITF Coverage Format<br>RPFTOC - RPFTOC Coverage Format<br>RST - IDRIS (RST) Coverage Format<br>WorldImage - A raster file accompanied by a spatial data file | same version (**2.3.5)** or latest version (**2.6.1**)? Will test with later version first, if have problem, will back to the old version. | | | |
| Migrate Geoserver's directories:<br>- public_html/geoserver_data<br>- workspaces<br>- Layergroups<br>- Styles<br>- gdal-data<br>- ??? | Look at the link to identify the directories the need to migrate from old server to the new one. http://docs.geoserver.org/latest/en/user/datadirectory/index.html. Ensure that all the name of | | | |

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| | directories listed are migrated. | | | |
| Geoserver Spatial Database<br>Before, Migration, need to consider, where should the spatial data store?<br>- Decided: unify the database for Geoserver to use only Postgresql<br>Action: Dear and Tin will convert mysql spatial MySQL to PostgreSql<br><br>Noted: changing the database or table names will affect to geoserver and codes. | Need to Discuss: Should we store all the spatial data/tables in the same database of wp like what ODC did. If so, we should have a protocol to identify them for each country. Keep in mind that the number of spatial data will keep increase by time, if we don't have any specific protocol to manage them, it will be messed-up. | | | Tin<br>Dear<br>Alex<br>Mishari<br>Huy Eng |
| Migrate Spatial Database<br>  -  Mysql Database:<br>     o  devnet_odc_database<br>  -  Postges Database:<br>     o  odc_db_dev | After making decision, migrate spatial database to specify database. … | | | Tin<br>Huy Eng |
| Reconfigure Geoserver | | | | |
| Republish the map layers if database name / users / table name changed | There are about 279 layers on Geoserver. | | 1-2 day s | Mapper Team |
| | | | | |

Question:

- All the library files are located in /usr/NGL3/apache-tomcat-6.0.32/webapps/newgenlibctxt/CatalogueRecords. Do we need to migrate to the new server, or they are already imported into CKAN?
- How is the wpckan script implemented, adding the archived content of ODC into CKAN?
- What happen with when the Goeserver changed the URL in CKAN?
- Does Geoserver allows to mantain information in different DBs? If so, we will have 1 DB for each country.
- **Huy Eng:** What is content storage layer tables of wordpress as you talk above?
- **Huy Eng:** Can we find the data in layer tables of wordpress on GeoServer
- **Huy Eng:** Why we storage maps and layers in layer tables of wordpress?

Actions:

- Alex will think about a solution for archiving old WP content into CKAN so it can be integrated and automated within Proteus' deployment scripts.

- Huy Eng/Tin: Separate spatial information from WP data in the DB used by ODC in order to have 1 DB for WP and 1 for Geoserver. Provide one dump for each of those resulting 2 database.
- [http://www.opendevelopmentcambodia.net/company-profiles/economic-land-concessions/](http://www.opendevelopmentcambodia.net/company-profiles/economic-land-concessions/) currently pulls the information from the same DB as wordpress (which currently contains the spatial information). If DBs are splitted, this should be considered.

- Think about how a single Geoserver instance could also fulfil potential future mapping needs from the partners. Dear stated that more geoserver instances would increase the memory requirements.
- Mappers need to manually add the image/CSV file of the maps in Download Map page of ODC, as the resource within the dataset that imported from Geoserver in CKAN. eg. [http://www.opendevelopmentcambodia.net/download/maps/atlas/en/Access-to-Health-Facilities.jpg](http://www.opendevelopmentcambodia.net/download/maps/atlas/en/Access-to-Health-Facilities.jpg)
  Note: CSV that generated from Geoserver that some problems with Khmer Unicode.

## Migrate ODC WordPress Database

After create each country website in MWP, then we need to migrate data only from ODC website into New database of MWP:
- DB name: devnet_odc_database
  o Here are the list of tables that need to Migrate to New Database:

| Current ODC WP Database | Database of MWP (Cambodia id=2) |
|---|---|
| wp_comments | wp_2_comments |
| wp_postmeta | wp_2_postmeta |
| wp_posts | wp_2_posts |
| wp_terms | wp_2_terms |
| wp_term_relationships | wp_2_term_relationships |
| wp_term_taxonomy | wp_2_term_taxonomy |
| wp_options | wp_2_options |
| Magic Field Tables: | |
| wp_mf_post_meta | wp_2_mf_post_meta |
| wp_mf_posttypes | wp_2_mf_posttypes |
| wp_mf_custom_taxonomy | wp_2_mf_custom_taxonomy |
| wp_mf_custom_groups | wp_2_mf_custom_groups |
| wp_mf_custom_fields | wp_2_mf_custom_fields |

o Migrate data only through Operation tools of PHPMyAdmin
o Replace url of opendevelopmentcambodia.net with
  http://192.168.33.10/cambodia in wp_2_option
o Migrate wp_content/**files_mf** into wp_content/blogs.dir/2/files_mf
o Set permission to 777 for files_mf and catch
o Migrate public_html/**download** into wp_content/blogs.dir/2/download
o Migrate public_html/**references** to wp_content/blogs.dir/2/references
o Migrate wp-content/**uploads** to wp-content/uploads/sites/2/2015
o Replace all link in wp_2_post:
http://www.opendevelopmentcambodia.net/wp-content/uploads/
to
http://cambodia.odmekong.dev/wp-content/uploads/sites/2/
  or to
http://cambodia.opendevelopmentmekong.net/wp-content/uploads/sites/2/


---Sumarry----------
uploads -> wp-content/uploads/sites/2/
files_mf -> wp-content/blogs.dir/2/files_mf/

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download -> wp-content/blogs.dir/2/download/
references -> wp-content/blogs.dir/2/references/
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