We registered a domain name 'ckandemo.site' on GoDaddy.com.

Create a free compute instance on Oracle Cloud Infrastructure (OCI)

OCPU count:4,   Memory (GB):24
adduser chuangma
adduser chuangma sudo

Installing CKAN from source

https://docs.ckan.org/en/2.11/maintaining/installing/install-from-source.html

1. Install the required packages

sudo apt-get install python3-dev libpq-dev python3-pip python3-venv git-core redis-server libmagic1

2. Install CKAN into a Python virtual environment

mkdir -p ~/ckan/lib
sudo ln -s ~/ckan/lib /usr/lib/ckan
mkdir -p ~/ckan/etc
sudo ln -s ~/ckan/etc /etc/ckan

sudo mkdir -p /usr/lib/ckan/default
sudo chown `whoami` /usr/lib/ckan/default
python3 -m venv /usr/lib/ckan/default
. /usr/lib/ckan/default/bin/activate

pip install --upgrade pip

pip install -e 'git+https://github.com/ckan/ckan.git@ckan-2.11.0#egg=ckan[requirements]'

3. Setup a PostgreSQL database

sudo apt install -y postgresql
sudo service postgresql start
sudo -u postgres psql -l

sudo -u postgres createuser -S -D -R -P ckan_default
# pass: 12345678

4. Create a CKAN config file

sudo mkdir -p /etc/ckan/default
sudo chown -R `whoami` /etc/ckan/

```
ckan generate config /etc/ckan/default/ckan.ini
vi /etc/ckan/default/ckan.ini
    # Replace pass with the password 12345678
    sqlalchemy.url = postgresql://ckan_default:12345678@localhost/ckan_default
    ckan.site_id = CkanDemo
    ckan.site_url = http://www.ckandemo.site
```

5. Setup Solr

```
sudo apt-get install openjdk-11-jdk
wget -O solr-9.6.1.tgz \
https://www.apache.org/dyn/closer.lua/solr/solr/9.6.1/solr-9.6.1.tgz?action=download
tar xzf solr-9.6.1.tgz solr-9.6.1/bin/install_solr_service.sh --strip-components=2
sudo bash ./install_solr_service.sh solr-9.6.1.tgz

sudo service solr status
sudo -u solr /opt/solr/bin/solr create -c ckan
sudo -u solr wget -O /var/solr/data/ckan/conf/managed-schema.xml \
https://raw.githubusercontent.com/ckan/ckan/dev-v2.11/ckan/config/solr/schema.xml
sudo service solr restart
CKAN Solr core will be available at http://localhost:8983/solr/ckan.
http://localhost:8983/solr/ckan

For access from internet
vi /etc/default/solr.in.sh
SOLR_JETTY_HOST="0.0.0.0"
set iptables for permit port 8983
set cloud network permit port 8983
```

6. Setup Redis

    nop

7. Create database tables

```
cd /usr/lib/ckan/default/src/ckan
ckan -c /etc/ckan/default/ckan.ini db init
```

8. Set up the DataStore

Goto DataStore extension

9. Create CKAN user

Goto Getting started

10. You're done!

. /usr/lib/ckan/default/bin/activate
cd /usr/lib/ckan/default/src/ckan
ckan -c /etc/ckan/default/ckan.ini run

Open http://127.0.0.1:5000/ in a web browser

For access from internet
vi /etc/ckan/default/ckan.ini
ckan.devserver.host = 0.0.0.0

set iptables for permit port 5000
set cloud network permit port 5000

sudo mkdir -p /var/lib/ckan/default
sudo chown -R chuangma /var/lib/ckan/default
cd /usr/lib/ckan/default/src/ckan
pip install -r dev-requirements.txt
Open http://www.ckandemo.site:5000/ in a web browser

11. test

optional
install docker https://docs.docker.com/engine/install/ubuntu/#install-using-the-repository
sudo usermod -aG docker $USER
sudo reboot

cd test-infrastructure
./setup.sh

./execute.sh
./teardown.sh

Deploying a source install

https://docs.ckan.org/en/2.11/maintaining/installing/deployment.html

1. Install Nginx

sudo apt-get install nginx

2. Create the WSGI script file

sudo cp /usr/lib/ckan/default/src/ckan/wsgi.py /etc/ckan/default/

3. Create the WSGI Server

. /usr/lib/ckan/default/bin/activate
pip install uwsgi
sudo cp /usr/lib/ckan/default/src/ckan/ckan-uwsgi.ini /etc/ckan/default/
Add a line in ckan-uwsgi.ini , Avoid "ModuleNotFoundError: No module named 'wsgi'"
chdir   = /etc/ckan/default

4. Install Supervisor for the uwsgi

sudo apt-get install supervisor
sudo service supervisor restart
Create the /etc/supervisor/conf.d/ckan-uwsgi.conf file
[program:ckan-uwsgi]

command=/usr/lib/ckan/default/bin/uwsgi -i /etc/ckan/default/ckan-uwsgi.ini

; Start just a single worker. Increase this number if you have many or
; particularly long running background jobs.
numprocs=1
process_name=%(program_name)s-%(process_num)02d

; Log files - change this to point to the existing CKAN log files
stdout_logfile=/etc/ckan/default/uwsgi.OUT
stderr_logfile=/etc/ckan/default/uwsgi.ERR

; Make sure that the worker is started on system start and automatically
; restarted if it crashes unexpectedly.
autostart=true
autorestart=true

; Number of seconds the process has to run before it is considered to have
; started successfully.
startsecs=10

; Need to wait for currently executing tasks to finish at shutdown.
; Increase this if you have very long running tasks.
stopwaitsecs = 600

; Required for uWSGI as it does not obey SIGTERM.
stopsignal=QUIT

5. Install an email server

sudo apt-get install postfix

6. Create the NGINX config file

Create your site's NGINX config file at /etc/nginx/sites-available/ckan
proxy_temp_path /tmp/nginx_proxy 1 2;

```
server {
    listen 443;
    server_name www.ckandemo.sit;
    rewrite ^(.*)$ http://${server_name}$1 permanent;
}

server {
    client_max_body_size 100M;
    location / {
        proxy_pass http://127.0.0.1:8080/;
        proxy_set_header X-Forwarded-For $remote_addr;
        proxy_set_header Host $host;
    }

}
```

sudo rm -vi /etc/nginx/sites-enabled/default
sudo ln -s /etc/nginx/sites-available/ckan /etc/nginx/sites-enabled/ckan
sudo service nginx restart

7. Generate JavaScript Translations

ckan -c /etc/ckan/default/ckan.ini translation js

8. Setup webassets and file uploads

Goto [FileStore and file uploads](#)

9. Access your CKAN site

set iptables for permit port 8888
set cloud network permit port 8888

sudo supervisorctl status
sudo supervisorctl restart ckan-uwsgi:*

http://[www.ckandemo.site](#):8888

Launch uwsgi error：
ModuleNotFoundError: No module named 'encodings'
chdir(): Permission denied [core/uwsgi.c line 1585]

Reason：config file ckan-uwsgi.ini line uid=www-data；However, the www-data user doesn't have permission to access some related directories.

We analyzed the permissions using the command '**namei -m** /etc/ckan/default'. This revealed that a directory named 'chuangma' had permissions set to 'drwxr-x---'.

The solution is: **chmod a+x chuangma**

10. Setup a worker for background jobs

https://docs.ckan.org/en/2.11/maintaining/background-tasks.html

sudo cp /usr/lib/ckan/default/src/ckan/ckan/config/supervisor-ckan-worker.conf /etc/supervisor/conf.d/ckan-worker.conf

sudo mkdir /var/log/ckan
sudo chmod 777 /var/log/ckan
sudo service supervisor restart
sudo supervisorctl status
sudo supervisorctl restart ckan-worker:*
test:
ckan -c /etc/ckan/default/ckan.ini jobs test

problems, check the logs of Supervisor and the worker:
cat /var/log/supervisor/supervisord.log
cat /var/log/ckan/ckan-worker.stdout.log
cat /var/log/ckan/ckan-worker.sterr.log

Getting started

https://docs.ckan.org/en/2.11/maintaining/getting-started.html

. /usr/lib/ckan/default/bin/activate
cd /usr/lib/ckan/default/src/ckan

Creating a sysadmin user

ckan -c /etc/ckan/default/ckan.ini sysadmin add ckanadmin email=admin@localhost \
name=ckanadmin
# pass: anu123456

Creating a user

ckan -c /etc/ckan/default/ckan.ini user add ckanuser01 email=ckanuser01@localhost \
name=ckanuser01
# pass: anu123456

create user via web

/etc/ckan/default/ckan.ini
ckan.auth.create_user_via_web = true

Creating test data

ckan -c /etc/ckan/default/ckan.ini generate fake-data organization
# check the output and save the ID of organization into variable:
owner_org=<Organization ID from the previous command>
ckan -c /etc/ckan/default/ckan.ini generate fake-data dataset --owner_org=$owner_org

FileStore and file uploads

https://docs.ckan.org/en/2.11/maintaining/filestore.html

1.Create the directory where CKAN will store uploaded files:

sudo mkdir -p /var/lib/ckan/default

2.Add the following line to your CKAN config file, after the [app:main] line:

ckan.storage_path = /var/lib/ckan/default

3.Set the permissions of your ckan.storage_path directory.

sudo chown -R www-data /var/lib/ckan/default
sudo chmod -R u+rwx /var/lib/ckan/default

4.Restart your web server, for example to restart uWSGI on a package install:

sudo supervisorctl restart ckan-uwsgi:*
sudo service nginx restart

DataStore extension

https://docs.ckan.org/en/2.11/maintaining/datastore.html

1. Enable the plugin

Add the datastore plugin to your CKAN config file:
ckan.plugins = activity datastore

2.Create users and databases

sudo -u postgres createuser -S -D -R -P -l datastore_default
# pass: 12345678

sudo -u postgres createdb -O ckan_default datastore_default -E utf-8

3.Set URLs

Add the following line to your CKAN config file, after the [app:main] line:
vi /etc/ckan/default/ckan.ini

```
ckan.datastore.write_url = postgresql://ckan_default:12345678@localhost/datastore_default
ckan.datastore.read_url =
postgresql://datastore_default:12345678@localhost/datastore_default
```

4.Set permissions

```
. /usr/lib/ckan/default/bin/activate
ckan -c /etc/ckan/default/ckan.ini datastore set-permissions | sudo -u postgres psql --set
ON_ERROR_STOP=1
```

3. Test the set-up

```
sudo supervisorctl restart ckan-uwsgi:*
sudo service nginx restart
```
list all DataStore resources:
http://www.ckandemo.site:8888/api/3/action/datastore_search?resource_id=_table_metadata

Data preview and visualization

https://docs.ckan.org/en/2.11/maintaining/data-viewer.html

Modify ckan.ini

ckan.views.default_views = datatables_view text_view image_view video_view audio_view webpage_view

ckan.plugins = activity datastore xloader datatables_view text_view image_view video_view audio_view webpage_view

Add to ckan.ini

```
# text_view settings
ckan.preview.text_formats = txt plain
ckan.preview.xml_formats = xml rdf rss
ckan.preview.json_formats = json
ckan.preview.image_formats = png jpeg jpg gif
```

Restart

sudo supervisorctl restart ckan-uwsgi:*

Other view plugins

Goto Other view plugins

Other view plugins

. /usr/lib/ckan/default/bin/activate

ckanext-viewhelpers

https://github.com/TonyWu/ckanext-viewhelpers

cd /lib/ckan/default/src
git clone **https://github.com/TonyWu/ckanext-viewhelpers.git**
cd ckanext-viewhelpers
python setup.py install

add viewhelpers to your ckan.plugins in your CKAN config file. Make sure you add it **before the other plugins that depend on it.**

dashboard_preview

https://github.com/ckan/ckanext-dashboard

cd /lib/ckan/default/src
git clone https://github.com/ckan/ckanext-dashboard.git
cd ckanext-dashboard
python setup.py install

Then add dashboard_preview to the list in ckan.plugins in your CKAN config file. Make sure to put it **after viewhelpers.**

pdf_view

pip install ckanext-pdfview

Add pdf_view to the ckan.plugins setting in your CKAN config file

ckanext-geoview

https://github.com/ckan/ckanext-geoview
pip install ckanext-geoview

Add this plugin to ckan.ini
[app:main]
….   resource_proxy geo_view
Or [geojson_view wmts_view shp_view]

cd /lib/ckan/default/src
git clone https://github.com/ckan/ckanext-mapviews.git
cd ckanext-mapviews
python setup.py install

Add navigablemap and/or choroplethmap to the list in ckan.plugins in your CKAN config file.

cd /lib/ckan/default/src
git clone https://github.com/ckan/ckanext-basiccharts.git
cd ckanext-basiccharts
python setup.py install

You can then add any (or all) to ckan.plugins
linechart barchart piechart basicgrid

Goto AssertionError

Table Designer extension

https://docs.ckan.org/en/2.11/maintaining/table-designer.html

1. Enable the plugin

Add the tabledesigner plugin to your CKAN config file before the datatables_view and datastore plugins:
ckan.plugins = activity tabledesigner datastore xloader datatables_view text_view image_view video_view audio_view webpage_view

2. Creating and updating rows with ckanext-excelforms

. /usr/lib/ckan/default/bin/activate

cd /lib/ckan/default/src
git clone https://github.com/ckan/ckanext-excelforms.git
cd ckanext-excelforms
pip install -r requirements.txt
python setup.py install

Add this plugin to your CKAN configuration before the tabledesigner plugin
ckan.plugins = ... excelforms tabledesigner …
Goto execlforms issues

3.Tracking changes with ckanext-dsaudit

. /usr/lib/ckan/default/bin/activate
cd /lib/ckan/default/src
git clone https://github.com/ckan/ckanext-dsaudit.git
cd ckanext-dsaudit
python setup.py install

Add this plugin to ckan.ini
[app:main]
ckan.plugins = ….. dsaudit activity ….
Goto dsaudit issues

Page View Tracking

https://docs.ckan.org/en/2.11/maintaining/tracking.html
Add the tracking extension to /etc/ckan/default/ckan.ini

[app:main]
ckan.plugins = ….. tracking

An error occurred during running. Suspended.

Multilingual Extension

https://docs.ckan.org/en/2.11/maintaining/multilingual.html

[app:main]
ckan.plugins = ….. multilingual_dataset multilingual_group multilingual_tag

Goto The dismax type query (Simple Search) returns no results.

Stats Extension

https://docs.ckan.org/en/2.11/maintaining/stats.html

[app:main]
ckan.plugins = … stats

Install XLoader extension

https://github.com/ckan/ckanext-xloader

Install the ckanext-xloader Python package

. /usr/lib/ckan/default/bin/activate
pip install ckanext-xloader

pip install -r https://raw.githubusercontent.com/ckan/ckanext-xloader/master/requirements.txt
pip install -U requests[security]

generate an api_token

ckan -c /etc/ckan/default/ckan.ini user token add ckanadmin ForXLoader
api_token can't be generated manually from the UI (User Profile > Manage > API tokens
issues:https://github.com/ckan/ckan/issues/8313

CKAN config file

vi /etc/ckan/default/ckan.ini
Add xloader to the ckan.plugins setting in your CKAN config file
ckan.plugins = activity datastore xloader

Add the following line to your CKAN config file, after the [app:main] line:
ckanext.xloader.api_token =
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJqdGkiOiJtb1IxX1VwMEJUQTZNeIh6U3RlaEJx
YzJCNGFPX0E2bFF1MmJQeXNEbmZjjIiwiaWF0IjoxNzI0ODIzNzA5fQ.ONKCEBQNlLHETW
1T9W-tAoTkVUAr0o-MenbDt8RJJNM
ckanext.xloader.jobs_db.uri = postgresql://ckan_default:12345678@localhost/ckan_default

Restart and Run CKAN.

sudo supervisorctl restart ckan-uwsgi:*
sudo service nginx restart

Test the worker:

ckan -c /etc/ckan/default/ckan.ini jobs worker

Some issues faced

Cannot create library viewhelpers at

*/home/chuangma/ckan/lib/default/lib/python3.10/site-packages/ckanext_viewhelpers-0.1-py3.10.egg/c
kanext/viewhelpers/public because webassets.yml is missing*
https://docs.ckan.org/en/2.10/changelog.html
*All the static CSS/JS files must be bundled via a webassets.yml file, as opposed to the previously
used, optional resource.config file. Check the Assets documentation for more details. (#4614)*

Solution:
https://github.com/ckan/ckanext-viewhelpers has not been updated for a long time,
use https://github.com/TonyWu/ckanext-viewhelpers   as a replacement.

execlforms issues

FileNotFoundError: [Errno 2] No such file or directory: '/home/chuangma/ckan/lib/default/lib/python3.10/site-packages/ckanext_excelforms-0.0.1-py3.10.egg/ckanext/excelforms/i18n'

Solution:
cp -R /home/chuangma/ckan/lib/default/src/ckanext-excelforms/ckanext/**excelforms** /home/chuangma/ckan/lib/default/lib/python3.10/site-packages/ckanext_excelforms-0.0.1-py3.10.egg/ckanext

dsaudit issues

FileNotFoundError: [Errno 2] No such file or directory: '/home/chuangma/ckan/lib/default/lib/python3.10/site-packages/ckanext_dsaudit-0.0.1-py3.10.egg/ckanext/dsaudit/i18n'

Solution:
cp -R /home/chuangma/ckan/lib/default/src/ckanext-dsaudit/ckanext/dsaudit /home/chuangma/ckan/lib/default/lib/python3.10/site-packages/ckanext_dsaudit-0.0.1-py3.10.egg/ckanext

Basiccharts issues

FileNotFoundError: [Errno 2] No such file or directory: '/home/chuangma/ckan/lib/default/lib/python3.10/site-packages/ckanext_basiccharts-0.1-py3.10.egg/ckanext/basiccharts/theme/public/scripts/basicgrid.js'

Solution:
cp -R ~/ckan/lib/default/src/ckanext-basiccharts/ckanext/basiccharts/basicgrid/resources/scripts /home/chuangma/ckan/lib/default/lib/python3.10/site-packages/ckanext_basiccharts-0.1-py3.10.egg/ckanext/basiccharts/theme/public/

AssertionError

After adding the basicgrid extension, the following error occurred when the system started up:
....
  File "/home/chuangma/ckan/lib/default/src/ckan/ckan/lib/jinja_extensions.py", line 129, in parse
    assert searchpath and current_path
AssertionError

After analysis, we discovered the following:
1. Issue location:
In the file ckan/ckan/lib/jinja_extensions.py, line 120, there's an assertion:
assert searchpath and current_path
2.Problem:

Sometimes both variables (searchpath and current_path) are simultaneously empty. These variables originate from config['computed_template_paths'].

3.Root cause:

The issue stems from ckanext-basiccharts/ckanext/basiccharts/plugin.py, where the configuration item 'extra_template_paths' was modified. The value of this item ends with an extraneous comma.

4.Contributing factor:

In ckan/ckan/config/environment.py, lines 205-210, the obtained 'extra_template_paths' value is directly converted to a list using split(). This ultimately results in an empty value within config['computed_template_paths'].

Solution: Insert the following line before the line 'config['computed_template_paths'] = template_paths' in ckan/ckan/config/environment.py:

template_paths = list(filter(None, template_paths))

File upload too large

Some errors occurred when uploading larger data files
The form contains invalid entries:
Upload: File upload too large
solution:
modify ckan config file
ckan.max_resource_size = 900
ckan.max_image_size = 20

The dismax type query (Simple Search) returns no results.

By analyzing the Solr log, we found that the Query fields are "qf=title_en^8 text_en^4" instead of the default QUERY_FIELDS = "name^4 title^4 tags^2 groups^2 text" in ckan/ckan/lib/search/query.py.
solution:
Temporarily disable the multilingual_dataset, multilingual_group, and multilingual_tag multilingual plugins.

The Pie chart view and Line chart view sometimes load successfully, but occasionally fail to load.

Using the web development tools (F12) for analysis, we discovered that when the views fail to load, a CORS error appears.
solution:
modify ckan.ini
ckan.cors.origin_allow_all = true

No need to be concerned

"WARNI [ckan.common] Option lang is not declared"

From:
File "/home/chuangma/ckan/lib/default/src/ckan/ckan/lib/i18n.py", line 105, in _get_locales
   assert not config.get('lang')
 File **"/home/chuangma/ckan/lib/default/src/ckan/ckan/common.py", line 142**, in get
   traceback.print_stack()

"WARNI [ckan.common] Option ckanext.xloader.ignore_hash is not declared"

From:
 File
"/home/chuangma/ckan/lib/default/lib/python3.10/site-packages/ckanext/xloader/plugin.py",
line 94, in configure
   if config_.get("ckanext.xloader.ignore_hash") in ["True", "TRUE", "1", True, 1]:
 File "/home/chuangma/ckan/lib/default/src/ckan/ckan/common.py", line 142, in get
   traceback.print_stack()

Reference

Linked Data and RDF
https://docs.ckan.org/en/2.11/maintaining/linked-data-and-rdf.html
Linked data and RDF features for CKAN are provided by the ckanext-dcat extension:
https://github.com/ckan/ckanext-dcat

https://extensions.ckan.org/

https://docs.ckan.org/en/2.11/
https://github.com/orgs/ckan/repositories?type=all

aws open data
https://aws.amazon.com/cn/opendata/?wwps-cards.sort-by=item.additionalFields.sortDate&wwps-cards.sort-order=desc
AWS Marketplace: NREL Wind Integration National Dataset (amazon.com)

https://www.osgeo.cn/post/170b9

https://datasetsearch.research.google.com/
Dataset - Catalog