INSTALLING THE GINAS, PUBLIC VERSION ON UBUNTU 16.04
USING POSTGRESQL 10 AS DATABASE
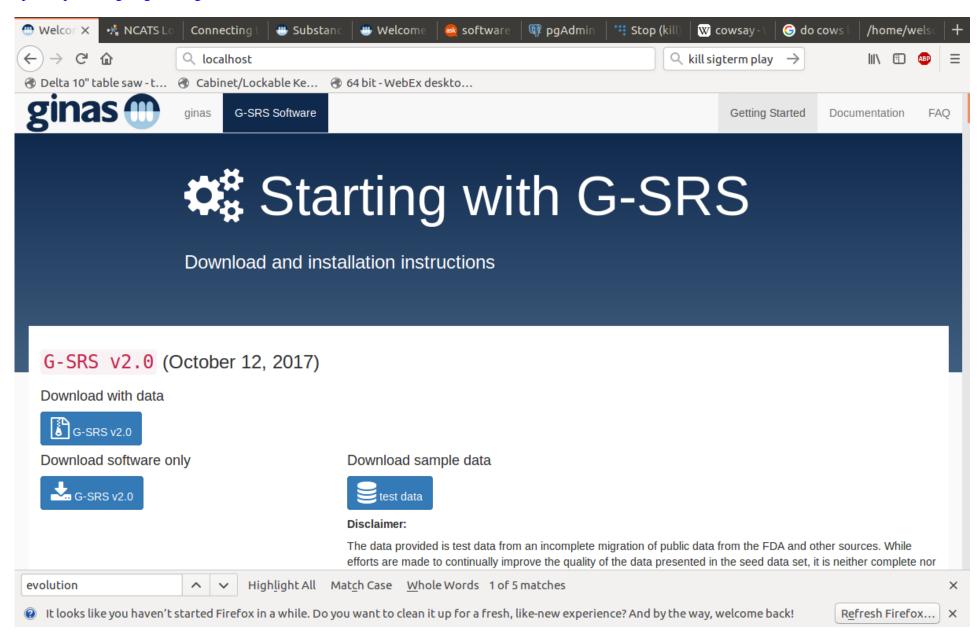
Ginas Monthly Meeting
Feb 7th, 2017
Alex Welsch

A. Slides
B. Details with CLI commands below

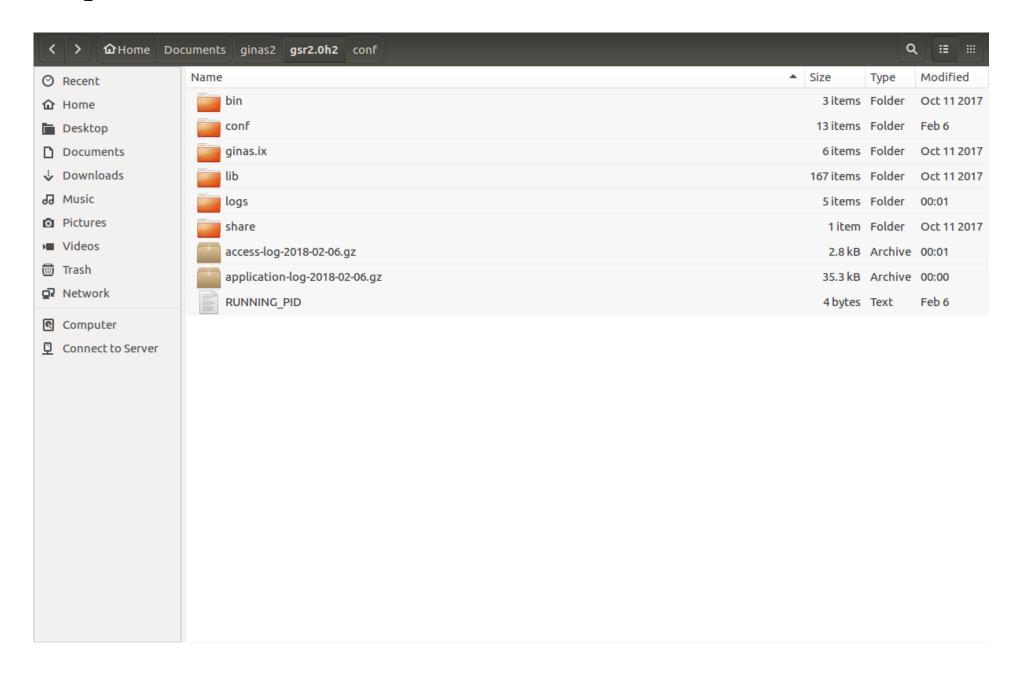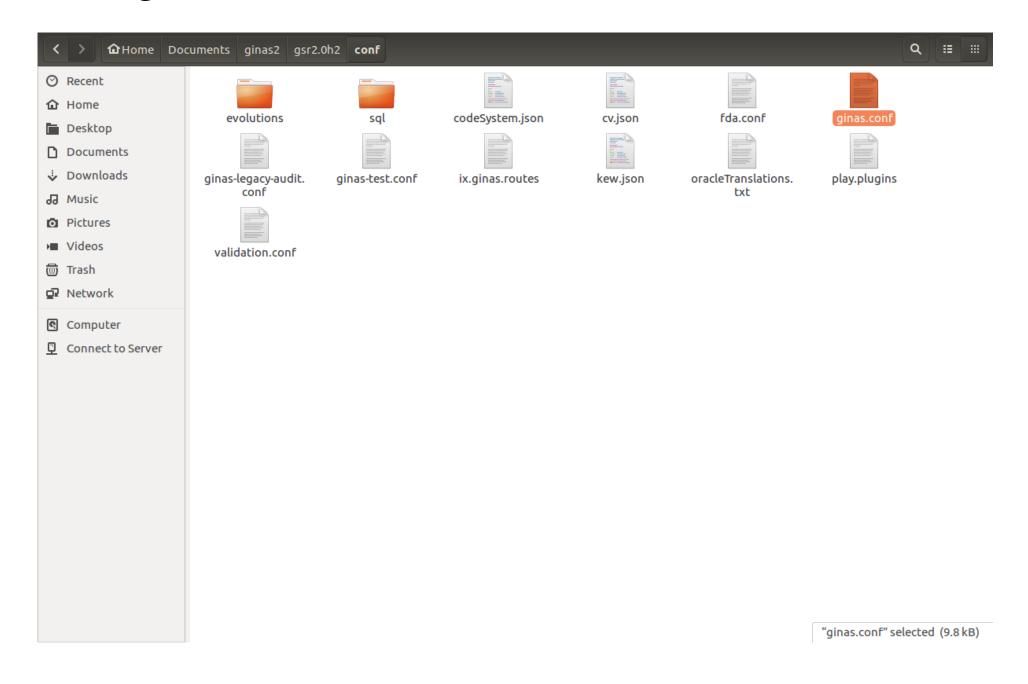# A.Slides

Get the program and sample data

https://tripod.nih.gov/ginas/#/gsrs/

Unzip the downloads

Name		Size	Type	Modified
📁	bin	3 items	Folder	Oct 11 2017
📁	conf	13 items	Folder	Feb 6
📁	ginas.ix	6 items	Folder	Oct 11 2017
📁	lib	167 items	Folder	Oct 11 2017
📁	logs	5 items	Folder	00:01
📁	share	1 item	Folder	Oct 11 2017
📦	access-log-2018-02-06.gz	2.8 kB	Archive	00:01
📦	application-log-2018-02-06.gz	35.3 kB	Archive	00:00
📄	RUNNING_PID	4 bytes	Text	Feb 6

Home Documents ginas2 **gsr2.0h2** conf

Recent
Home
Desktop
Documents
Downloads
Music
Pictures
Videos
Trash
Network

Computer
Connect to Server

Locate "ginas.conf"

Recent

Home

Desktop

Documents

Downloads

Music

Pictures

Videos

Trash

Network

Computer

Connect to Server

evolutions

sql

codeSystem.json

cv.json

fda.conf

ginas.conf

ginas-legacy-audit. conf

ginas-test.conf

ix.ginas.routes

kew.json

oracleTranslations. txt

play.plugins

validation.conf

"ginas.conf" selected (9.8 kB)

Edit "ginas.conf"

| installing-ginas-ubuntu-pg-20180207.txt × | *Untitled Document 1 × | images.html × | ginas.conf × |

```
348 # db.default.url="jdbc:h2:"${ix.home}"/h2/ginas;MVCC=true"
349 # db.default.user=sa
350 # db.default.password=""
351 # db.default.maximumPoolSize = 50
352 #END H2 example
353 ###############
354
355
356 #evolutionplugin=disabled
357
358 #This is for testing
359 #ebean.default2="ix.test.modelsb.*"
360 ###############
361 #H2 example
362 #db.default2.driver=org.h2.Driver
363 #db.default2.url="jdbc:h2:"${ix.home}"/h2/ginas;MVCC=true"
364 #db.default2.user=sa
365 #db.default2.password=""
366 #END H2 example
367 ###############
368
369 ###############
370 #postGreSQL example
371 db.default.driver="org.postgresql.Driver"
372 db.default.url="jdbc:postgresql://localhost:5432/ginas_db1"
373 db.default.user="ginas_usr1"
374 db.default.password="hello5"
375 #END postGreSQL example
376 ###############
377
378 # You can specify the path to an additional mapping file to make
379 # certain keys resolve as if they were other keys (e.g. old codes)
380
381 # The expected file format is a header-less 2-column tab-delimitted
382 # file. The first column is the key you want to map, and the second
383 # column is the key you want to map to. This will only be used during
384 # url resolving, and only when there are no matches with the standard
385 # ways that keys are resolved (using database lookups)
386
387 #ix.ginas.mapping.synonymsFile="./olduuidmapping.txt"
```
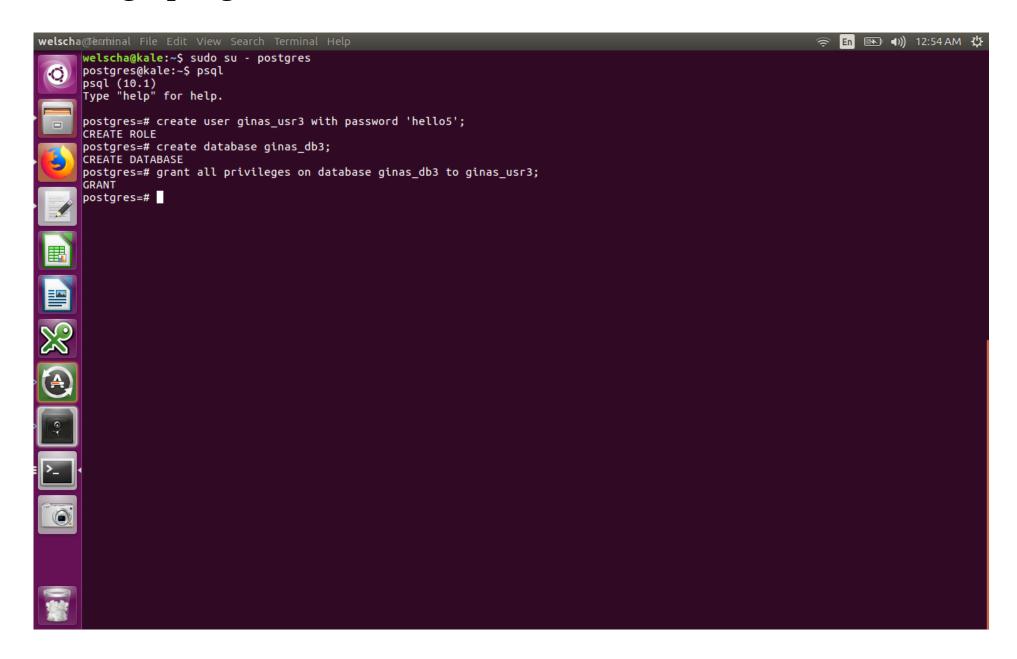
About "apt-get" (intalling a package silly example)

```
welscha@kale:~$ sudo apt-get install cowsay
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.10.0-28 linux-headers-4.10.0-28-generic linux-headers-4.10.0-40 linux-headers-4.10.0-40-generic
  linux-image-4.10.0-28-generic linux-image-4.10.0-40-generic linux-image-extra-4.10.0-28-generic
  linux-image-extra-4.10.0-40-generic
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  cowsay-off
Suggested packages:
  filters
The following NEW packages will be installed:
  cowsay cowsay-off
0 upgraded, 2 newly installed, 0 to remove and 80 not upgraded.
Need to get 0 B/21.7 kB of archives.
After this operation, 112 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Selecting previously unselected package cowsay.
(Reading database ... 291230 files and directories currently installed.)
Preparing to unpack .../cowsay_3.03+dfsg1-15_all.deb ...
Unpacking cowsay (3.03+dfsg1-15) ...
Selecting previously unselected package cowsay-off.
Preparing to unpack .../cowsay-off_3.03+dfsg1-15_all.deb ...
Unpacking cowsay-off (3.03+dfsg1-15) ...
Processing triggers for man-db (2.7.5-1) ...
Setting up cowsay (3.03+dfsg1-15) ...
Setting up cowsay-off (3.03+dfsg1-15) ...
welscha@kale:~$
```

```
welscha@kale:~$ echo "Got Alfalfa?"|cowsay
 _____
< Got Alfalfa? >
 --------------
        \   ^__^
         \  (oo)_____
            (__)\       )\/\
                ||----w |
                ||     ||
welscha@kale:~$ █
```

Install postgres (more complicated but same idea)

```
myuser%> cd
myuser%> mkdir temp-pg
myuser%> cd temp-pg
|
myuser%> wget -q https://www.postgresql.org/media/keys/ACCC4CF8.asc -O - | sudo apt-key add -

myuser%> sudo sh -c 'echo "deb http://apt.postgresql.org/pub/repos/apt/ `lsb_release -cs`-pgdg main" >> /etc/apt/sources.list.d/
pgdg.list'

myuser%> sudo apt-get update
myuser%> sudo apt-get upgrade

myuser%> sudo apt-get install postgresql postgresql-contrib
myuser%> cd
```

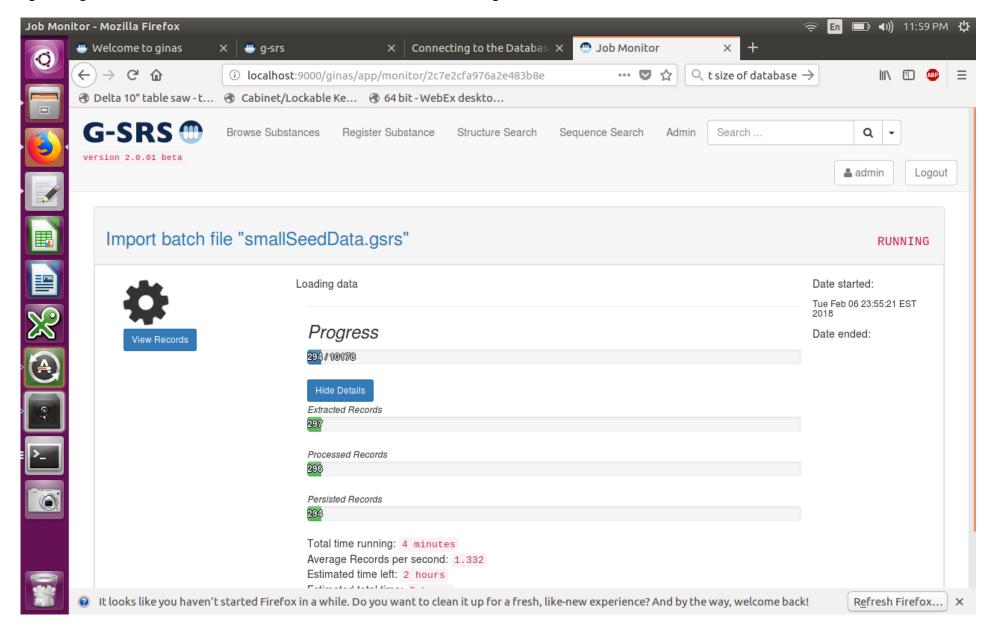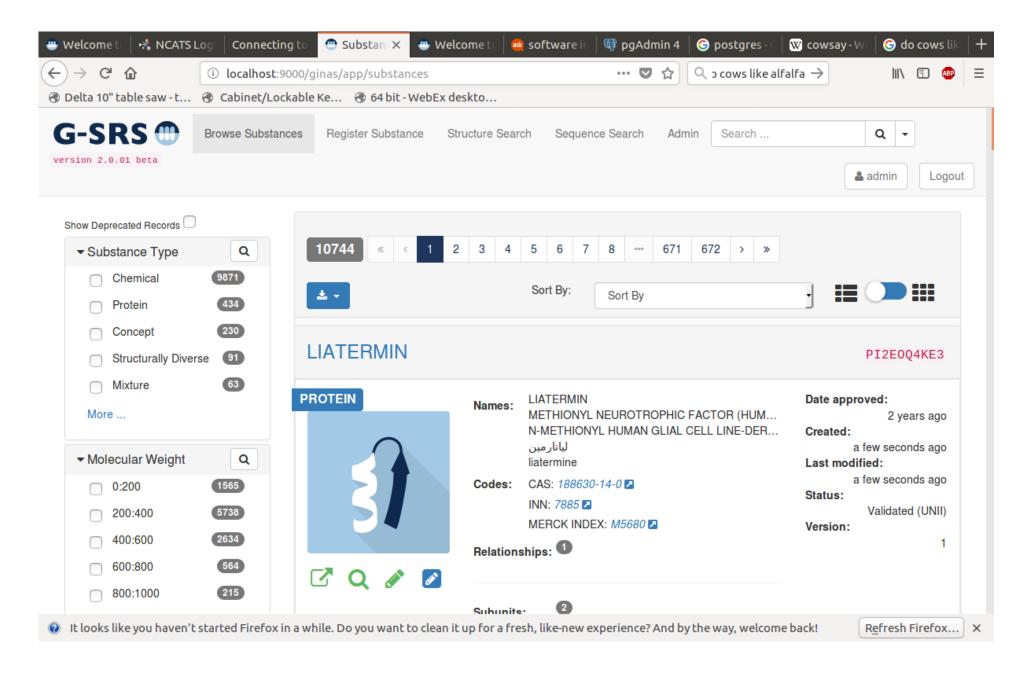# Creating a postgres user and db

Run ginas!

```
welscha@kale:~/Documents/ginas2/gsr2.0h2$ ./bin/ginas -Dconfig.file=conf/ginas.conf -J-Xmx4G
Play server process ID is 15766
Initializing
```
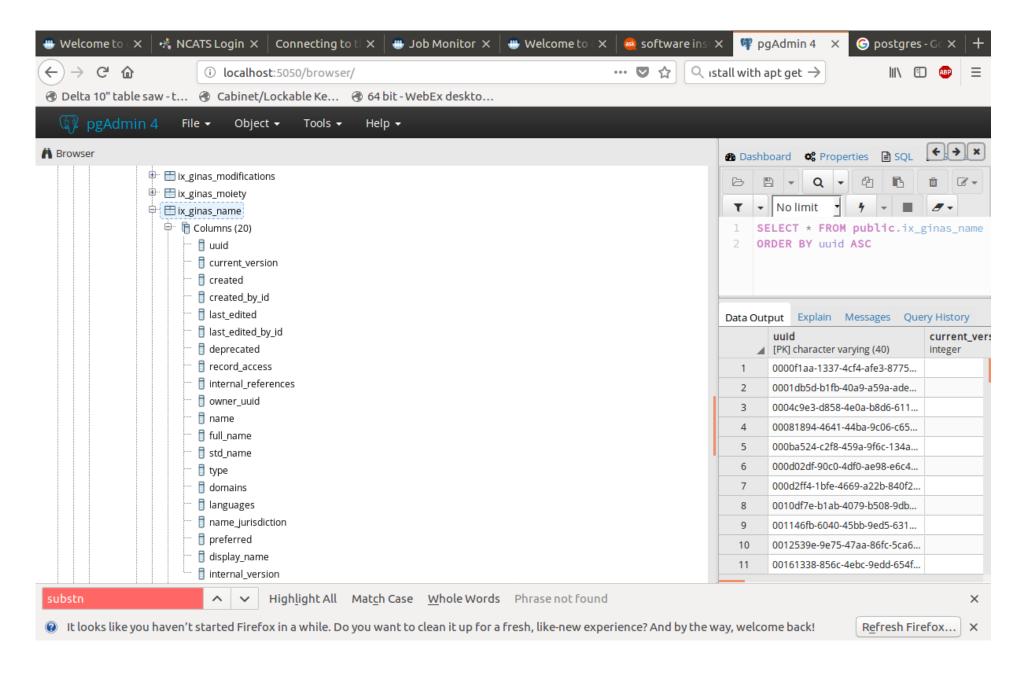
Import the sample data

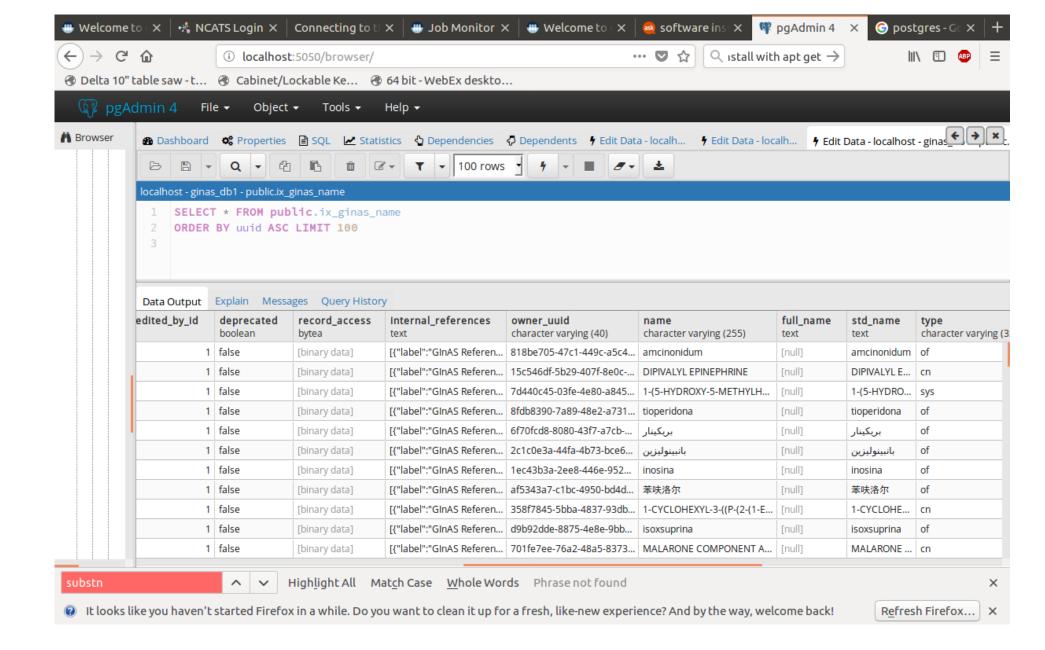Login using admin/admin as credentials; then click on Admin > Data Management

Browse substances

Looking at the database (optional PgAdmin4)

localhost:5050/browser/

ıstall with apt get →

Delta 10" table saw - t... | Cabinet/Lockable Ke... | 64 bit - WebEx deskto...

pgAdmin 4   File ▾   Object ▾   Tools ▾   Help ▾

Browser

Dashboard | Properties | SQL | Statistics | Dependencies | Dependents | Edit Data - localh... | Edit Data - localh... | Edit Data - localhost - ginas...

100 rows

localhost - ginas_db1 - public.ix_ginas_name

```
1  SELECT * FROM public.ix_ginas_name
2  ORDER BY uuid ASC LIMIT 100
3
```

Data Output | Explain | Messages | Query History

edited_by_id	deprecated boolean	record_access bytea	internal_references text	owner_uuid character varying (40)	name character varying (255)	full_name text	std_name text	type character varying (3
1	false	[binary data]	[{"label":"GInAS Referen...	818be705-47c1-449c-a5c4...	amcinonidum	[null]	amcinonidum	of
1	false	[binary data]	[{"label":"GInAS Referen...	15c546df-5b29-407f-8e0c-...	DIPIVALYL EPINEPHRINE	[null]	DIPIVALYL E...	cn
1	false	[binary data]	[{"label":"GInAS Referen...	7d440c45-03fe-4e80-a845...	1-(5-HYDROXY-5-METHYLH...	[null]	1-(5-HYDRO...	sys
1	false	[binary data]	[{"label":"GInAS Referen...	8fdb8390-7a89-48e2-a731...	tioperidona	[null]	tioperidona	of
1	false	[binary data]	[{"label":"GInAS Referen...	6f70fcd8-8080-43f7-a7cb-...	بريكينار	[null]	بريكينار	of
1	false	[binary data]	[{"label":"GInAS Referen...	2c1c0e3a-44fa-4b73-bce6...	بانبينوليزين	[null]	بانبينوليزين	of
1	false	[binary data]	[{"label":"GInAS Referen...	1ec43b3a-2ee8-446e-952...	inosina	[null]	inosina	of
1	false	[binary data]	[{"label":"GInAS Referen...	af5343a7-c1bc-4950-bd4d...	苯呋洛尔	[null]	苯呋洛尔	of
1	false	[binary data]	[{"label":"GInAS Referen...	358f7845-5bba-4837-93db...	1-CYCLOHEXYL-3-((P-(2-(1-E...	[null]	1-CYCLOHE...	cn
1	false	[binary data]	[{"label":"GInAS Referen...	d9b92dde-8875-4e8e-9bb...	isoxsuprina	[null]	isoxsuprina	of
1	false	[binary data]	[{"label":"GInAS Referen...	701fe7ee-76a2-48a5-8373...	MALARONE COMPONENT A...	[null]	MALARONE ...	cn

substn

^ ∨ Highlight All   Match Case   Whole Words   Phrase not found   ×

It looks like you haven't started Firefox in a while. Do you want to clean it up for a fresh, like-new experience? And by the way, welcome back!   Refresh Firefox... ×

Kill the ginas process

```
welscha@kale:~/Documents/ginas2/gsr2.0h2$ ./bin/ginas -Dconfig.file=conf/ginas.conf -J-Xmx4G
Play server process ID is 15766
Initializing
welscha@kale:~/Documents/ginas2/gsr2.0h2$ 
```

In another terminal window ...

```
welscha@kale:~$
welscha@kale:~$
welscha@kale:~$ kill -SIGTERM 15766
welscha@kale:~$ 
```

Details with CLI commands

```
INSTALLING THE GINAS, PUBLIC VERSION ON UBUNTU 16.04
USING POSTGRESQL 10 AS DATABASE

Ginas Monthly Meeting
Feb 7th, 2017
Alex Welsch


========================================================================
*** STEP 1. Get backround information and instructions on the NCATS site
========================================================================

        https://tripod.nih.gov/ginas/#/gsrs/release

        (There are instructions if you scroll down!)

        Requirements:
            4-core (+) CPU
            8GB (+) Memory
            100GB (+) hard drive
            Java 8

        For our purposes, the evolutions step should be skipped.

==================================================================
*** STEP 2.  Download the public Ginas version and example data.
==================================================================

        See: https://tripod.nih.gov/ginas/#/gsrs/release

        Open a linux terminal window and issue the following commands:

myuser%> cd
myuser%> mkdir ginas2
myuser%> cd ginas2
myuser%> wget https://tripod.nih.gov/ginas/releases/gsrs2_0_beta_bundled_h2_smallseed.zip
myuser%> unzip gsrs2_0_beta_bundled_h2_smallseed.zip
myuser%> wget https://tripod.nih.gov/ginas/releases/smallSeedData.gsrs
myuser%> cd gsr2.0h2
myuser%> ls  # to see contents

==============================
*** STEP 3. INSTALL POSTGRESQL
==============================

(From: https://tecadmin.net/install-postgresql-server-on-ubuntu/)

myuser%> cd
myuser%> mkdir temp-pg
myuser%> cd temp-pg

myuser%> wget -q https://www.postgresql.org/media/keys/ACCC4CF8.asc -O - | sudo apt-key add -

myuser%> sudo sh -c 'echo "deb http://apt.postgresql.org/pub/repos/apt/ `lsb_release -cs`-pgdg main"
>> /etc/apt/sources.list.d/pgdg.list'

myuser%> sudo apt-get update
myuser%> sudo apt-get upgrade
```

```
myuser%> sudo apt-get install postgresql postgresql-contrib
myuser%> cd


## If all goes well, a linux operating system "postgres" user now exists.

myuser%> sudo su - postgres
==> gets you to that account temporarily.

postgres%> exit
==> to get back to your own user account.

myuser%>

## Go back into the postgres account and start "psql" --- the command line interface.

myuser%> sudo su - postgres
postgres%> psql
postgres=# \password postgres    ## I set it to hello4
postgres=# \q

=======================================================
*** STEP 4. Create the Ginas database and database user
=======================================================

postgres%> psql

## You're now in the postgres CLI.
## Issue the following commands to create a Ginas user and database.
## You can use whatever user/database/password you want.

postgres-# create user ginas_usr with password 'hello5';
postgres-# create database ginas_db;
postgres-# grant all privileges on database ginas_db to ginas_usr;
postgres-# \q
postgres%> exit
myuser%>

==================================================================
*** STEP 5. MAKE Postresql open to local accounts on the computer.
==================================================================

## Change your PostresSQL configuration to allow local access to the Postgresql database.

myuser%> sudo nano /etc/postgresql/10/main/pg_hba.conf

    ## Change the Posgres Configuration to allow local connections

    ## Chnage FROM:
        local   all     all     peer
    ## TO:
        local   all             all     md5

## Control-X to quit nano.

## then restart Postgresql Server

myuser%> sudo service postgresql restart


## Now, check if we can access database with psql. Notice we are doing it directly from myuser%

myuser%> psql -U ginas_usr -d ginas_db -W
ginas_db=>
```

```
## try \l to list databases, the quit.

ginas_db=> \l
ginas_db=> \q


=====================================================================
*** STEP 6.  Change your ginas configuration to specify PostgreSQL.
=====================================================================

myuser%> cd
myuser%> cd ginas2/gsr2.0h2
myuser%> nano ./conf/ginas.conf

Add the following at the END.

#postGreSQL example
db.default.driver="org.postgresql.Driver"
db.default.url="jdbc:postgresql://localhost:5432/ginas_db"
db.default.user="ginas_usr"
db.default.password="hello5"
#END postGreSQL example

=======================
*** STEP 7.  Run Ginas
=======================

myuser%>./bin/ginas -Dconfig.file=conf/ginas.conf -J-Xmx4G
## ... or
myuser%> nohup ./bin/ginas -Dconfig.file=conf/ginas.conf -J-Xmx4G

## Take note of the process ID after so you can stop it later.

## When the program is done initializing ==> in your browser load:

http://localhost:9000/ginas/app


## Click on the Admin link, login with credentials.

        user: admin
        password: admin

## If this is your first time, you'll have no data and you'll have to import it.

a) click on admin in the TOP menu (next to "sequence search")
b) click on data management
c) In the file dialog, navigate to the file smallSeedData.gsrs you downloaded earlier and click on the
load button. Loading will take a while. You don't have to load everything if you just want to see if
it worked.  After loading some substances, you'll be able to browse substances by clicking on the
Substances Link.


=======================
*** STEP 7.  Quit Ginas
=======================

## When you want to end the process gracefully:

myuser%> kill -SIGTERM YOUR_PROCESS_ID

=========================
*** ERRORS YOU MIGHT GET
=========================
```

In some attempts, the Play framework seemed to hang or complained about file locks. I made things work by clearing the cache directory (./ginas.ix/cache). However, there maybe consequences contend with if you do that.

Database 'default' is in an inconsistent state with postgresql driver.
==> I got this when I first tried to install and maybe things didn't complete with the database population. The remedy was to drop the database and recreate it as in Step 4

Oops, cannot start the server.
org.jboss.netty.channel.ChannelException: Failed to bind to: /0.0.0.0:9000
==> find the PID for the process running play framework with ==> ps auxwww | grep play ==> then ==> kill -9 YOUR_PID

After running ginas, screen hangs and says "Initializing" forever.
(It may not tell you it's done initializing, so if you've been staring at a blank screen that says "initializing" for a while, try loading http://localhost:9000/ginas/app in your server.)

===========
*** Links
===========

https://tripod.nih.gov/ginas/#/gsrs/

https://help.ubuntu.com/community/AptGet/Howto

https://medium.com/coderscorner/installing-oracle-java-8-in-ubuntu-16-10-845507b13343

https://tecadmin.net/install-postgresql-server-on-ubuntu/

http://suite.opengeo.org/docs/latest/dataadmin/pgGettingStarted/firstconnect.html

https://www.ntchosting.com/encyclopedia/databases/postgresql/create-user/

http://blog.jasonmeridth.com/posts/postgresql-command-line-cheat-sheet/

https://askubuntu.com/questions/831262/how-to-install-pgadmin-4-in-desktop-mode-on-ubuntu
(see Victor's answer)

        Once you've installed it, start it again, like so:
        ## cd ~/pgadmin4
        ## source bin/activate
        ## python lib/python2.7/site-packages/pgadmin4/pgAdmin4.py

https://www.digitalocean.com/community/tutorials/sqlite-vs-mysql-vs-postgresql-a-comparison-of-relational-database-management-systems

================
*** Explore API
================
https://tripod.nih.gov/ginas/#/gsrs/api#details
https://tripod.nih.gov/ginas/app/api/v1