



Querying the Omero database

ALERT: Although the psql queries listed in this document will not modify the omero database in any way, it is strongly recommended that a database backup is in place prior to interacting with the database directly, so that the database can be restored from backup in the event of unforeseen problems.

Using direct psql queries

Connect to the Columbus server (via PuTTY/Terminal) as the 'columbus' user and issue the following command to establish a connection to the omero4_4 database:

```
$ psql omero4_4
psql (8.4.13)
Type "help" for help.

omero4_4=>
```

List all database user accounts along with their IDs

```
omero4_4=> select firstname, lastname, omename as login, id from experimenter;
```

firstname	lastname	login	id
Guest	Account	guest	1
columbus	columbus	columbus	2
root	root	root	0

List all active users along with their screen, plate and group associations

```
omero4_4=> select e.omename as user, s.name as screen, p.name as plate, eg.name as group from
screen s join screenplatelink spl on spl.parent=s.id join plate p on spl.child=p.id join
experimentergroup eg on eg.id=p.group_id join experimenter e on e.id=p.owner_id order by
e.omename, s.name;
```

user	screen	plate	group
Sales	Reference	JLu_080612	SalesDemos
columbus	Autophagy	autophagy	Group1
columbus	bigred	P020-Migration	Default

Filtering:

The row output can be filtered using a WHERE clause. For example:

- **By Group name:** WHERE eg.name=('SalesDemos')
- **By user name:** WHERE e.omename=('Sales')
- **By sub-string of plate name:** WHERE p.name like('JLu%')

```
omero4_4=> select e.omename as user, s.name as screen, p.name as plate, eg.name as group from
screen s join screenplatelink spl on spl.parent=s.id join plate p on spl.child=p.id join
experimentergroup eg on eg.id=p.group_id join experimenter e on e.id=p.owner_id WHERE p.name
like ('JLu%') order by e.omename, s.name;
```

user	screen	plate	group
Sales	Reference	JLu_080612	SalesDemos

List all Plates with User and Screen information

```
omero4_4=> select ex.omename as User, s.name as ScreenName, s.id as ScreenID, p.name as
PlateName, p.id as PlateID, e.time as Created from plate p inner join event e on
e.id=p.creation_id inner join screenplatelink spl on spl.child=p.id inner join screen s on
s.id=spl.parent inner join experimenter ex on s.owner_id=ex.id;
```

user	screenname	screenid	platename	plateid	created
columbus	Kinetic	1	P021-Cell	2	2015-05-28 16:36:28.121
columbus	Reference	3158	Plate	3208	2018-10-17 12:25:38.661
nick	Ref Data	3153	JLu_080612	3203	2018-10-09 16:54:57.668

Filtering:

The row output can be filtered using a WHERE clause. For example:

- **By user name:** WHERE ex.omename=('columbus')
- **By screen:** WHERE s.name=('Kinetic')
- **By creation dates prior to specified date:** WHERE e.time < to_timestamp('2016-12-01', 'yyyy-mm-dd')

```
omero4_4=> select ex.omename as User, s.name as ScreenName, s.id as ScreenID, p.name as
PlateName, p.id as PlateID, e.time as Created from plate p inner join event e on
e.id=p.creation_id inner join screenplatelink spl on spl.child=p.id inner join screen s on
s.id=spl.parent inner join experimenter ex on s.owner_id=ex.id WHERE e.time <
to_timestamp('2016-12-01', 'yyyy-mm-dd');
```

user	screenname	screenid	platename	plateid	created
columbus	Kinetic	1	P021-Cell	2	2015-05-28 16:36:28.121

The column output can also be filtered by removing the SELECT clauses as required, for example to print a list of plate IDs owned by a specified user.

```
omero4_4=> select p.id as PlateID from plate p inner join event e on e.id=p.creation_id inner
join screenplatelink spl on spl.child=p.id inner join screen s on s.id=spl.parent inner join
experimenter ex on s.owner_id=ex.id WHERE ex.omename=('columbus');
```

plateid
3551
1
2
4
218
251
221

List size of the 10 largest relations

```
omero4_4=> SELECT nspname || '.' || relname AS "relation",
pg_size_pretty(pg_relation_size(C.oid)) AS "size" FROM pg_class C LEFT JOIN pg_namespace N ON
(N.oid = C.relnamespace) WHERE nspname NOT IN ('pg_catalog', 'information_schema') ORDER BY
pg_relation_size(C.oid) DESC LIMIT 10;
```

relation	size
public.eventlog	155 MB
public.event	110 MB
public.eventlog_entitytype	86 MB

```
...  
(10 rows)
```

Using Omero API

Connect to the Columbus server (via PuTTY/Terminal) as the 'columbus' user then navigate to the /usr/local/PerkinElmerCTG/Columbus/bin directory.

```
$ cd /usr/local/PerkinElmerCTG/Columbus/bin
```

List all user and group information

```
$ ./omero user list
```

Note: After entering the above command users are asked to confirm the following information:

Server: Hit Enter to use [localhost]

Username: These are omero db user accounts, not OS accounts. The 'root' (admin) account can be used to ensure iteration over all data.

Password: The password of the aforementioned user

id	login	first name	last name	email	active	admin	member of	owner of
0	root	root	root		Yes	Yes	3	253
1	guest	Guest	Account				2	
2	columbus	columbus	columbus		Yes	Yes	103,104	3