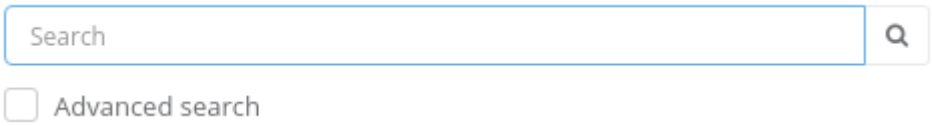
Advanced search syntax help

The Advanced search option can be activated whenever you see the 'Advanced search' checkbox bellow the search bar:



When active will allow advanced search conditions and selection options according to the following documentation.

Search conditions

A search condition is a basic search query building block. It always consists of 3 elements: `field`, `comparison operator` and `value`, placed exactly in this order from left to right.

Here's an example - looking for users with first name "John". In the example below `first_name` is a `field`, `=` is a `comparison operator` and `"John"` is a `value`:

```
first_name = "John"
```

Another example, looking for users who registered in 2017 or later: `date_joined >= "2017-01-01"`
One more example, looking for super-users:

```
is_superuser = True
```

And one more - finding all users whose names are in a given list:

```
first_name in ("John", "Jack", "Jason")
```

Multiple search conditions

You can combine multiple search conditions together using the logical operators `and` (both conditions must be true) and `or` (at least one of the conditions must be true, no matter which one). Important - logical operators must be written in lowercase: `and` and `or` is correct, and `AND` or `OR` is incorrect and will cause an error.

Example: looking for users with first name "John" `and` registered in 2017 or later. Please note that we have 2 search conditions here, joined with `and`:

```
first_name = "John" and date_joined >= "2017-01-01"
```

One more example, looking for users who are either super-users `or` marked with "Staff" flag:

```
is_superuser = True or is_staff = True
```

Logical operators can be quite powerful, as they let you to build complex search queries. If you're building a complex query there's an important tip to keep in mind: if your query contains both `and` and `or` operators, we strongly encourage you to use parenthesis to specify the precedence of operators. Here's an example to illustrate why this is important. Let's assume that you want to pull users who are either super-users `or` marked with Staff flag, `and` registered in 2017 or later. It might be tempting to write a query like this:

```
is_superuser = True or is_staff = True and date_joined > "2017-01-01"
```

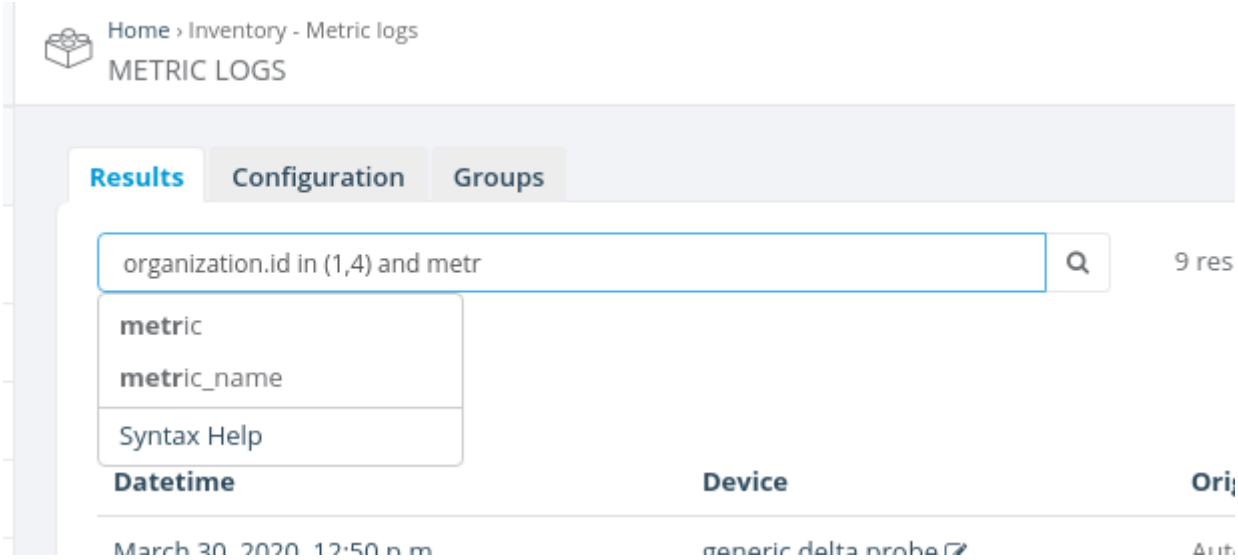
The problem with the query above is that it won't do what you expect, because the `and` operator is evaluated first. In fact it pulls users who are either super-users (no matter when they registered) `or` users who are both Staff `and` registered after 2017. This problem can be fixed with parentheses, just put them around the search conditions that must be evaluated first, like this:

```
(is_superuser = True or is_staff = True) and date_joined > "2017-01-01"
```

Using parenthesis is recommended only when your query mixes both `and` and `or` operators. If your query contains multiple logical operators of only one kind (either `and` or `or`) you can safely omit parenthesis and it will work as expected.

Fields

In a search query, you should reference the current model's fields exactly as they're defined in Python code for that particular Django model. Search query input has an auto-completion feature that pops up automatically and suggests all available options. If you're not sure what the field name is, then pick one of the options displayed (example):



In most cases, internal model fields look similar to what you see in Django admin interface, just in lowercase and with `_` instead of spaces. For example, in the standard Users admin interface, the internal `first_name` field is displayed as `First name`, `email` field is displayed as `Email address` and so on. However there could be exceptions to this, if developers have defined custom display names that look very different from their internal representation. In such cases it might be a good idea to ask developers to override this help template and provide an "internal name -> display name" fields mapping right here.

Note that some fields that you see in the admin interface may not be searchable. This includes computed fields, i.e. fields which are not stored in the database as a plain value, but rather calculated from other values in the code.

Related models

Advanced search allows you to search by related models as well (it automatically converts relations to database joins under the hood). Use the `.` dot separator to designate related models and their fields. For example:

```
groups.name in ("Marketing", "Support")
```

See the `.` in the example above? It means that `groups` is a related model and `name` is a field of that model. As usual, DjangoQL auto-completion provides suggestions for all available related models and their fields. For complex data structures you can use multiple levels of relation, i.e. specifying a related model, then its related model, and so on.

In most cases the search condition with a related model must specify the exact field of that model, but not a related model itself. For example, `groups in ("Marketing", "Support")` won't work, because `groups` is a model and not a field. Models can have many fields, and the server doesn't know against which field you would like to perform a comparison. However there's one notable exception to this - when you'd like to find records that are linked (or not linked) to any related models of that kind. In such a case, you should compare the related model to a special `None` value, like this:

```
groups = None
```

The example above would search for users that don't belong to any groups. If you'd like to find all users that belong to at least any group instead, use `!= None`:

```
groups != None
```

Comparison operators

Operator	Meaning	Example
=	equals	first_name = "John"

Operator	Meaning	Example
!=	does not equal	id != 42
~	contains a substring	email ~ "@gmail.com"
!~	does not contain a substring	username !~ "test"
>	greater	date_joined > "2017-02-28"
>=	greater or equal	id >= 9000
<	less	id < 9000
<=	less or equal	last_login <= "2017-02-28 14:53"
in	value is in the list	first_name in ("John", "Jack", "Jason")
not in	value is not in the list	id not in (42, 9000)
startswith	value starts with the provided argument	name startswith "te"
endswith	value ends with the provided argument	name endswith "st"

Notes:

1. `~`, `!~`, `startswith` and `endswith` operators can be applied only to string fields;
2. `True`, `False` and `None` values can be combined only with `=` and `!=`;
3. `in` and `not in` operators must be written in lowercase. `IN` or `NOT IN` is incorrect and will cause an error.

Logical operators

Standars `and` and `or` logical operator can be used on search query, ie:

```
name = "test" and description = "test objects"
```

```
name = "test" or name = "example"
```

Values

Type	Examples	Comments
string	`"this is a string"`	Strings must be enclosed in double quotes, like `"this"`. If your string contains double quote symbols in it, you should escape them with a backslash, like this: `"this is a string with \"quoted\" text"`.

Type	Examples	Comments
int	`42`, `0`, `-9000`	Integer numbers are just digits with optional unary minus. If you're typing big numbers please don't use thousand separators, DjangoQL doesn't understand them.
float	`3.14`, `-0.5`, `5.972e24`	Floating point numbers look like integer numbers with optional fractional part separated with dot. You can also use `e` notation to specify power of ten. For example, `5.972e24` means `5.972 * 10^24`.
bool	`True`, `False`	Boolean is a special type that accepts only two values: `True` or `False`. These values are case-sensitive, you should write `True` or `False` exactly like this, with the first letter in uppercase and others in lowercase, without quotes.
date	`"2017-02-28"`	Dates are represented as strings in `"YYYY-MM-DD"` format.
datetime	`"2017-02-28 14:53"` `"2017-02-28 14:53:07"`	Date and time can be represented as a string in `"YYYY-MM-DD HH:MM"` format, or optionally with seconds in `"YYYY-MM-DD HH:MM:SS"` format (24-hour clock). Please note that comparisons with date and time are performed in the server's timezone, which is usually UTC.
null	`None`	This is a special value that represents an absence of any value: `None`. It should be written exactly like this, with the first letter in uppercase and others in lowercase, without quotes. Use it when some field in the database is nullable (i.e. can contain NULL in SQL terms) and you'd like to search for records which either have no value (`some_field = None`) or have some value (`some_field != None`).

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