MYOB Exo Business White Paper

Search Templates

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myob

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Introduction

Search templates are pre-defined SQL statements that can be applied to searches in the Exo Business system. Search templates can take in parameters such as a Debtor account number, so that they can return results specific to one record. Default search templates are installed with Exo Business, and expert users can write and insert new templates.

> **Note:** Search templates are an advanced feature for expert users—this document assumes detailed knowledge of SQL and the Exo Business system.

Version History

Search templates are supported by Exo Business 8.7 SP2 and later and the Exo API 1.0 SP1 and later:

- Exo Business 8.7 SP2 and Exo API 1.0 SP1 introduced support for stock and geolocation search templates (search templates that search for company records based on location information).
- Exo Business 2015.1 added the ability to create and edit search templates via the Exo Business Configurator, and added search template functionality to stock search screens in the Exo Business system.
- Exo Business 2015.3 and Exo API 1.3 added the ability to create search templates for company records.
- Exo Business 2015.5 added the ability to create search templates for General Ledger accounts and subaccounts, and added search template functionality to GL account search screens in the Exo Business system.
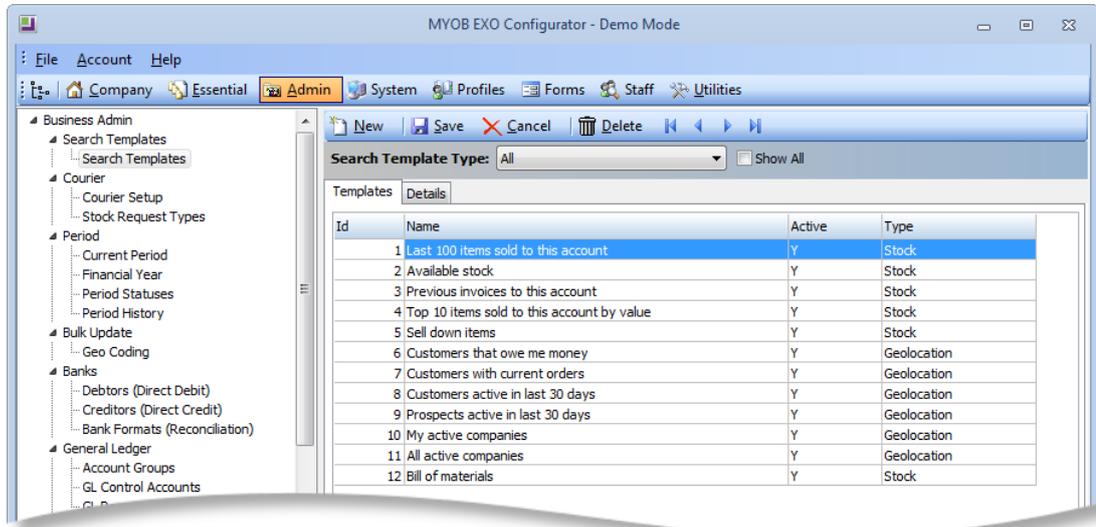
Adding Search Templates

Search templates are stored in the Exo Business database in the SEARCH_TEMPLATES table. This table is added in an upgrade to Exo Business 8.7 SP2 or later (or by using the Exo OnTheGo Configurator). The SEARCH_TEMPLATES table has the following columns:

| Name	Type	Description
SEQNO	integer	A unique ID number for the search template.
NAME	varchar(50)	A descriptive name for the search template.
SQL	varchar(max)	The SQL statement that defines the search template—see "Search Template SQL Statements" on page 4 for details on how to write the statement.
ACTIVE	char(1)	Contains "Y" if the search template is active; otherwise "N".

TYPE	varchar(5)	The type of search template: - S – stock search template - G – geolocation search template (templates for searching based on latitude/longitude information) - GL – GL account search template - GLSUB – GL subaccount template - Y – company search template
AVAILABILITY	varchar(50)	Determines how the search template can be used. Contains one or more of the following: - A – available via the Exo API - S – available on the Stock Search window when accessed from a Sales Order - D – available on the Stock Search window when accessed from a Debtor Invoice - G – available on the GL Search window when accessed from the Integrated Cashbook (GL transactions) - N – available on the GL Search window when accessed from the Integrated Cashbook (Income transactions) - X – available on the GL Search window when accessed from the Integrated Cashbook (Expense transactions) - L – available on the GL Search window when accessed from Sales - P – available on the GL Search window when accessed from Purchases – available on the GL Search window when accessed from Inwards Goods - B – available on the GL Search window when searching for Bank Accounts - J – available on the GL Search window when accessed from Exo Job Costing - U – available on the GL Search window for Stock Adjustments - M – available on the Company Search window in Exo CRM

A set of sample search templates is installed when the SEARCH_TEMPLATES table is created—see "Sample Search Templates" on page 11 for details of these templates.

To add a search template, you can insert a record into the table manually, or create one using the Exo Business Configurator. The Search Templates screen in the Admin section displays all search templates in the Exo Business database and allows you to edit them and add new ones:

Click **New** to add a new template or double-click on an existing template to edit it. The Details tab is displayed:
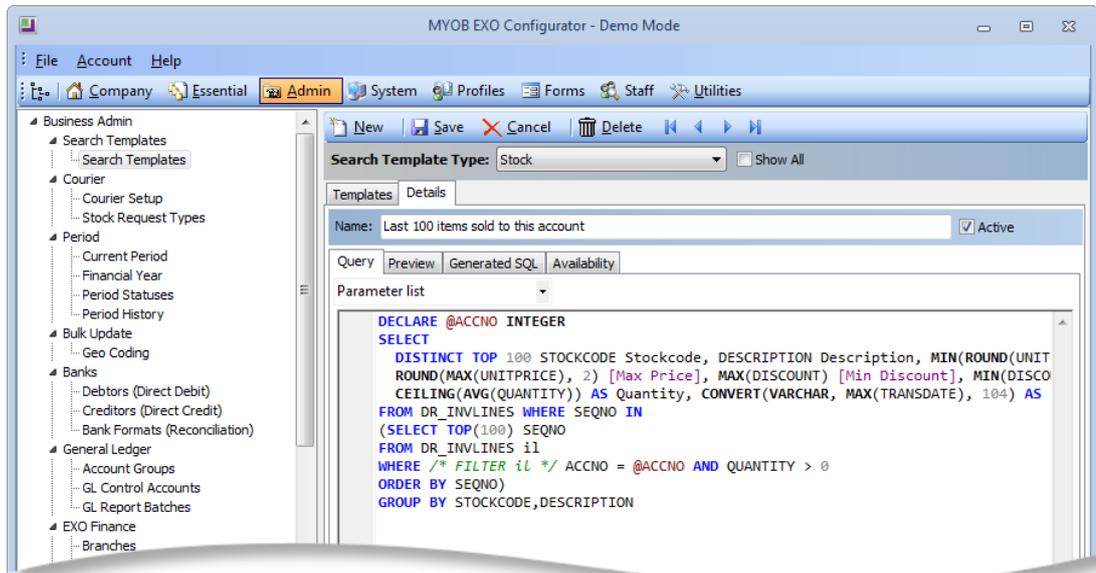

Enter the SQL template that defines the search template into the Query sub-tab (see "Search Template SQL Statements" on page 4 for information on entering the SQL statement). You can use the **Parameter list** dropdown to enter parameters into the statement.

The **Active** check box lets you mark a template as active or inactive. Inactive templates are not available for selection on interfaces that support search templates.

The Preview sub-tab displays the results of a search using the entered SQL statement, while the Generated SQL sub-tab displays the SQL statement that will be generated from the query on the Query sub-tab—if any problems are detected with the query, this can be used to debug them.

The Availability sub-tab lets you control where and to whom each template will be available:
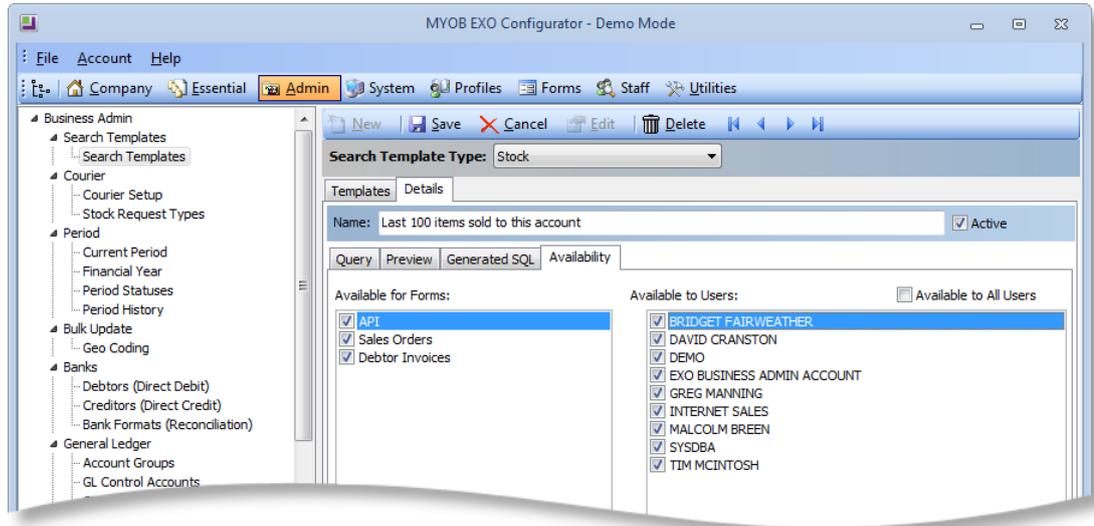
Use the **Available for Forms** section to specify which Exo Business forms the search template will be available on, and whether or not it should be available via the Exo API (the available options differ depending on the search template type). In the **Available to Users** section, specify which users the template should be available to or tick the **Available to All Users** option.

Search Template SQL Statements

A search template consists of an SQL statement specifying the search results to return. It can include user-defined parameters and can incorporate the standard filters used in Exo Business for the data type.

Required Fields

Search template queries must include the following fields:

- Stock: STOCKCODE and DESCRIPTION

- Geolocation: DISTANCE

- Company: COMPANYID and ACCTYPE

- General Ledger: ACCNO and NAME

Attempting to save an active template that doesn't include these fields will result in an error message.

Declaring Parameters

Parameters are defined in the template using the standard SQL DELCARE syntax:
DECLARE @VARNAME DATATYPE, e.g.

- `DECLARE @ACCNO INTEGER`
- `DECLARE @LOCNO INTEGER`

> **Note:** When entering templates in the Exo Business Configurator, you can define and add parameters using the Parameters list dropdown.

Predefined Parameters

There are several "standard" parameters that have a predefined value:

- `@USER` – the STAFFNO of the current user (integer)
- `@DATE` – the current day (datetime)
- `@NOW` – the current date and time (datetime)

These parameters must be declared within the SQL statement, e.g. `DECLARE @USER INTEGER`; however, they don't need to be passed in as parameters from the search URL (doing so will override the default value).

Using Parameters in the SQL Statement

Parameters can be substituted into SQL in the same way they are used with T-SQL, for example:

```
DECLARE @ACCNO INT
SELECT
    DISTINCT STOCKCODE,
        DESCRIPTION,
    CEILING(AVG(QUANTITY)) AS QUANTITY,
        MAX(TRANSDATE) AS [LAST SALE]
FROM DR_INVLINES
WHERE SEQNO IN (
        SELECT TOP(100) SEQNO
        FROM DR_INVLINES
        WHERE QUANTITY > 0 AND ACCNO = @ACCNO
        ORDER BY SEQNO
        )
GROUP BY STOCKCODE,DESCRIPTION
```

Suggested Quantities

Stock search templates can return suggested quantities for stock items. When searching for a stock item on the Stock Search window (see page 8), stock quantities will default to the suggested quantity if one is present.

To use suggested quantities a field named SUGGEST_QTY must be included in the search template query; the value of this field can be calculated however you want.

Standard Search Filters

As well as the custom SQL you write, the search template can also include the standard search filters for the data, i.e. the filters that would be applied when searching for the data in Exo Business:
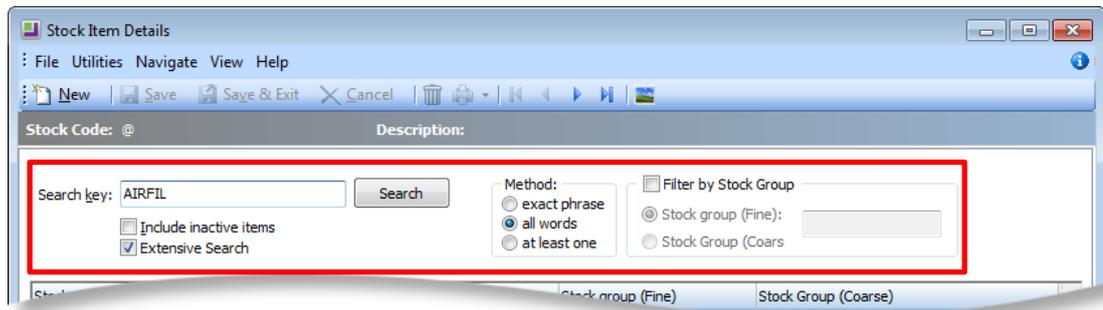
These filters can be incorporated into the search template SQL statement at any point; exactly where they should go depends on the nature of the search template; for example, the filtering would need to be performed before any SELECT TOP N or WHERE IN SELECT sub-queries. To insert the filters, enter the text /* FILTER {alias} */. (The optional alias is used to provide an SQL alias when required to avoid "ambiguous column name" errors.) For example:

```
DECLARE @ACCNO INTEGER
SELECT
    DISTINCT STOCKCODE, DESCRIPTION, MIN(ROUND(UNITPRICE, 2))
[MIN.PRICE], ROUND(MAX(UNITPRICE), 2) [MAX.PRICE],
    MAX(DISCOUNT)[MIN.DISC],MIN(DISCOUNT)[MAX.DISC],
CEILING(AVG(QUANTITY)) AS QUANTITY, CONVERT(VARCHAR,
MAX(TRANSDATE), 104) AS [LAST SALE]
FROM DR_INVLINES WHERE SEQNO IN
(SELECT TOP(100) SEQNO
FROM DR_INVLINES il
WHERE /* FILTER il */
ACCNO = @ACCNO AND QUANTITY > 0
ORDER BY SEQNO)
GROUP BY STOCKCODE,DESCRIPTION
```

This is substituted with an appropriate WHERE clause. For example, stock items use:

```
(alias.STOCKCODE IN (
    SELECT STOCKCODE FROM STOCK_ITEMS S
    LEFT JOIN STOCK_GROUPS G1 ON S.STOCKGROUP = G1.GROUPNO
    LEFT JOIN STOCK_GROUP2S G2 ON S.STOCKGROUP = G2.GROUPNO
    WHERE S.STOCKCODE LIKE @Q OR S.DESCRIPTION LIKE @Q OR
S.BARCODE1 LIKE @Q OR S.BARCODE2 LIKE @Q or S.BARCODE3 LIKE @Q
OR S.ALERT LIKE @Q)) AND
```

The WHERE clause from the above example becomes:

```
FROM DR_INVLINES il
WHERE (il.STOCKCODE IN (
    SELECT STOCKCODE FROM STOCK_ITEMS S
    LEFT JOIN STOCK_GROUPS G1 ON S.STOCKGROUP = G1.GROUPNO
    LEFT JOIN STOCK_GROUP2S G2 ON S.STOCKGROUP = G2.GROUPNO
    WHERE S.STOCKCODE LIKE @Q OR S.DESCRIPTION LIKE @Q OR
S.BARCODE1 LIKE @Q OR S.BARCODE2 LIKE @Q or S.BARCODE3 LIKE @Q
OR S.ALERT LIKE @Q)) AND
ACCNO = @ACCNO AND QUANTITY > 0
```

@Q is substituted with the search query—when using search templates via the Exo API, this query is specified using the standard q=searchstring parameter.

The WHERE clause will also include any extra search fields set up via the **Extra stock items search fields** profile setting (EXTRA_STOCK_SEARCH_FIELD).

The standard search filter is added to the search template with an AND; however, you can edit the surrounding SQL so that it will use an OR operation, e.g.

```
FROM DR_INVLINES il
WHERE /* FILTER il */ 1=1 OR
ACCNO = @ACCNO AND QUANTITY > 0
```

Row Colouring

Some search windows display rows in different colours depending on certain properties of the records. When applying a search template, rows will only be coloured if the column that determines the colouring is included in the search template.

Using Search Templates

In Exo Business

Search templates can be used to filter searches:

- when selecting a stock item for a transaction line, e.g. on a Sales Order or Debtor Invoice,
- when selecting a GL account or subaccount for a transaction,
- when selecting a company in Exo CRM.

> **Note:** Geolocation search templates are currently available via the Exo API only; they do not appear on search windows for companies.

Selecting a search template immediately filters the search window according to the selected template. The currently selected template is displayed at the top of the window. The **Filter** toolbar button can be used to toggle the filtering on and off.

> **Note:** Right-clicking on the grid header and selecting **Save column settings** saves the grid layout separately for each search template; you can have a different layout for each search template and swap between them.
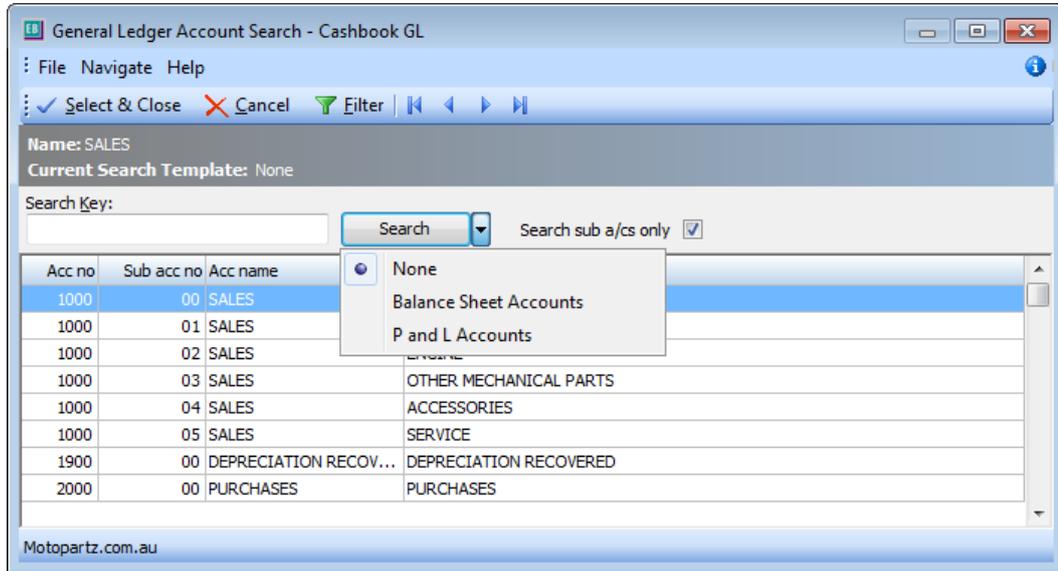
Stock Searches

The Stock Search window contains a dropdown that displays all of the search templates that have been defined for Stock searches:
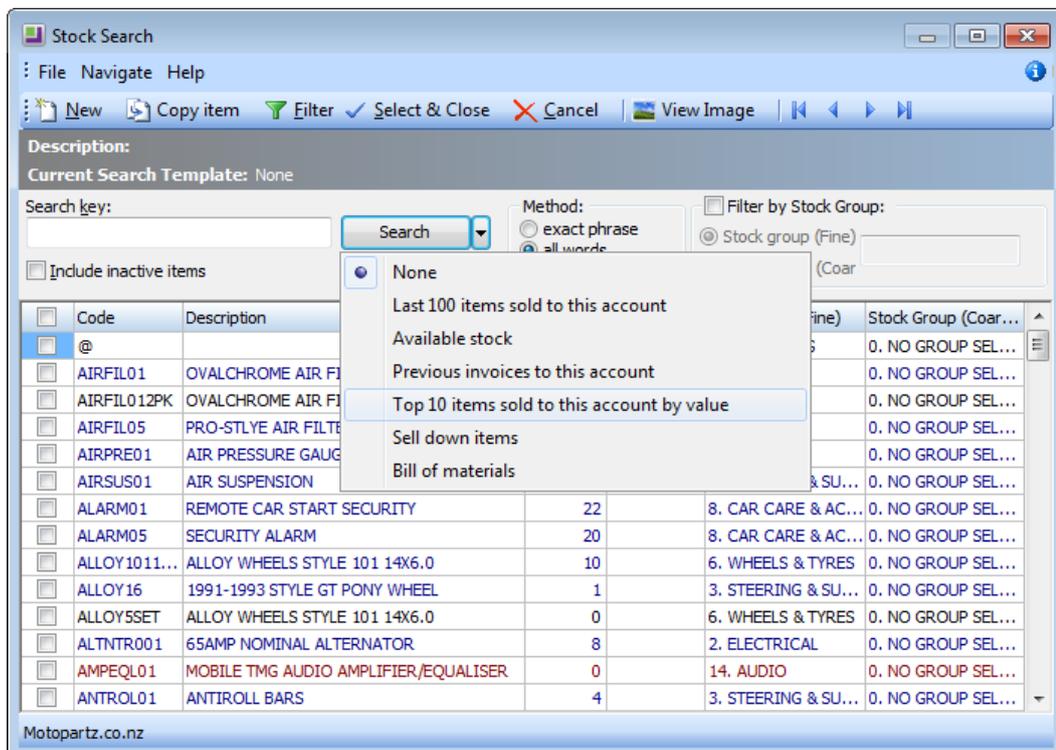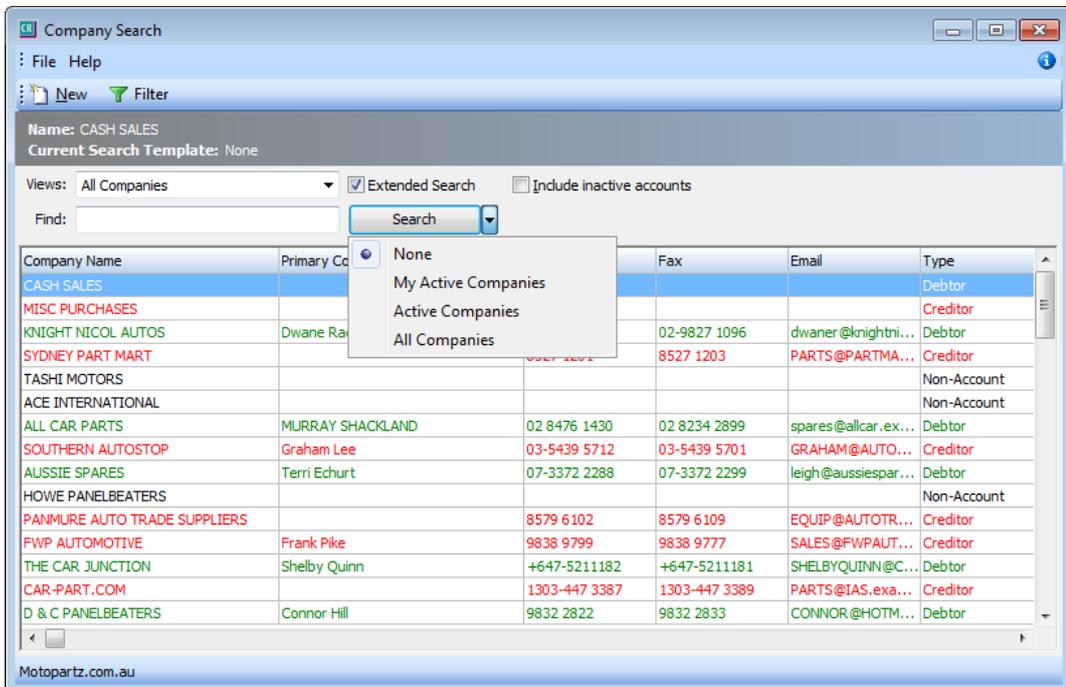
GL Account Searches

The General Ledger Account Search window contains a dropdown containing all of the search templates that have been defined for GL account searches:

Company Searches

Company Search windows in Exo CRM contain a dropdown containing all of the search templates that have been defined for company account searches:

Using the Exo API

Search templates are accessible via the Exo API. A call to one of the following endpoints returns a list of available templates:

- `searchtemplate` – lists all search templates in the system.
- `geolocationtemplate` – lists only search templates for location-based searches on company accounts (TYPE = G).
- `stocksearchtemplate` – lists only search templates for searches on stock items (TYPE = S).
- `companysearchtemplate` – lists only search templates for searches on companies (TYPE = Y).

To use a search template to return search results, call the relevant endpoint with the ID number of the search template you want to use, e.g.

`http://exo.api.myob.com/stocksearchtemplate/1`

Depending on the search template being called, the call may need to pass parameters to filter the search results. Parameters are passed using standard HTTP query parameters, e.g.

`http://exo.api.myob.com/searchtemplate/1?accno=21&q=airfil`

This will return search results using the search template with the ID number 1, passing in the Debtor account number 21 and the search string "airfil" as parameters. Parameters can be passed in any order.

> **Note:** For more information, see the Exo API documentation at
> **http://developer.myob.com/api/exo/**.

Date Format

If a date is passed as a parameter, an optional `dateformat` parameter can be added in the same way as it can for the `bestprice` endpoint. This is added to the search URL:

`http://exo.api.myob.com/searchtemplate/1?accno=3&mindate=13-10-2011&dateformat=dd-MM-yyyy`

If the date format isn't provided, the date is interpreted as `yyyy-MM-ddThh:mm:ss` (ISO8601) or `yyyy-MM-dd hh:mm:ss`.

Sample Search Templates

Several sample search templates are added when the SEARCH_TEMPLATES table is first created. The following table describes these sample templates:

ID	Name	Type	Description
1	Last 100 items sold to this account	S	Takes in a Debtor account number and returns the last 100 stock items sold to that account.
2	Available stock	S	Takes in a location ID number and returns all stock items that have available stock at that location.
3	Previous invoices to this account	S	Takes in a Debtor account number and returns all stock lines from the most recent invoice for that account.
4	Top 10 items sold to this account by value	S	Takes in a Debtor account number and returns the top 10 highest value stock items sold to that account.
5	Sell down items	S	Returns all discontinued stock items (items where STOCK_CLASSIFICATION = 70) that still have stock.
6	Customers that owe me money	G	Takes in latitude and longitude coordinates and a radius (in km) and returns the top 10 Debtor accounts within the selected radius who have an outstanding balance above $200.00.
7	Customers with current orders	G	Takes in latitude and longitude coordinates and a radius (in km) and returns the top 10 Debtor accounts within the selected radius who have current Sales Orders.
8	Customers active in last 30 Days	G	Takes in latitude and longitude coordinates and a radius (in km) and returns the top 10 Debtor accounts within the selected radius who have one or more transactions from the last 30 days.
9	Prospects active in last 30 Days	G	Takes in latitude and longitude coordinates and a radius (in km) and returns the top 10 Non Account records within the selected radius that have been updated in the last 30 days.
10	My active companies	G	Takes in latitude and longitude coordinates, a radius (in km) and a staff ID and returns the top 10 active Debtor accounts within the selected radius who have that staff member as their salesperson.
11	All active companies	G	Takes in latitude and longitude coordinates and a radius (in km) and returns the top 10 Debtor accounts within the selected radius whose **Active** flag is enabled.
12	Bill of Materials	S	Returns all Bills of Materials in the system, with stock levels and types ("KitBOM" or "BuildBOM").
13	My Active Companies	Y	Returns all active Debtors and Non Accounts that have the logged in user as their salesperson.
14	Active Companies	Y	Returns all active Debtors and Non Accounts.
15	All Companies	Y	Returns all Debtors and Non Accounts.