

# Create and save managed queries with the query editor

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Managed queries generate a list of work items based on the filter criteria you provide. You can create queries from the web portal or from a supported client, such as Visual Studio Team Explorer and Team Explorer Everywhere. Also, you can open a query in [Excel](#) to perform bulk additions and modifications.

In this article you'll learn:

- ✓ How to open and edit a query
- ✓ How to add or create a query
- ✓ How to group query clauses
- ✓ Understand when to use a flat-list, tree, or direct-links query
- ✓ How to query across projects

For quick access to all query tasks, supported operators—such as, `Contains`, `In`, `In Group`, and `<>` (not operator) — based on field data type, and query examples, see [Query quick reference](#).

## Prerequisites

By default, all project members and users with **Stakeholder** access can view and run all shared queries. You can change the permissions set for a shared query folder or shared query. For details, see [Set query permissions](#).

- You must connect to a project. If you don't have a project yet, [create one](#).
- To view, run, or email a query, you must be granted **Stakeholder** access or higher. For details, see [About access levels](#).
- To add and save a query under **Shared queries**, you must be granted **Basic** access or higher. Also, you

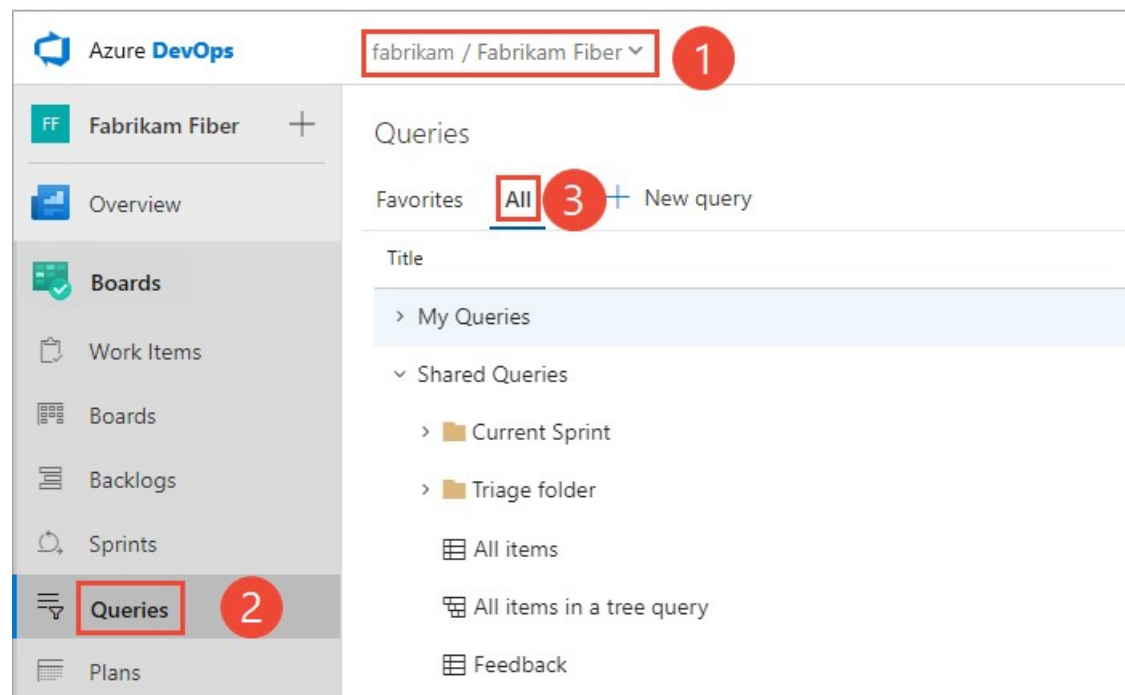
must have your **Contribute** permission set to **Allow** for the folder you want to add the query to. By default, the **Contributors** group doesn't have this permission.

#### ⚠ Observação

Users with **Stakeholder** access for a public project have full access to query features just like users with **Basic** access. For details, see [About access levels](#).

## Open Queries

From your web browser, (1) check that you have selected the right project, (2) choose **Boards>Queries**, and then (3) choose **All**.



If it is your first time opening **Work**, the page opens to **Favorites** which lists all queries you have favorited. Otherwise, you can choose **All** to view all queries you've defined and shared queries defined for the project.

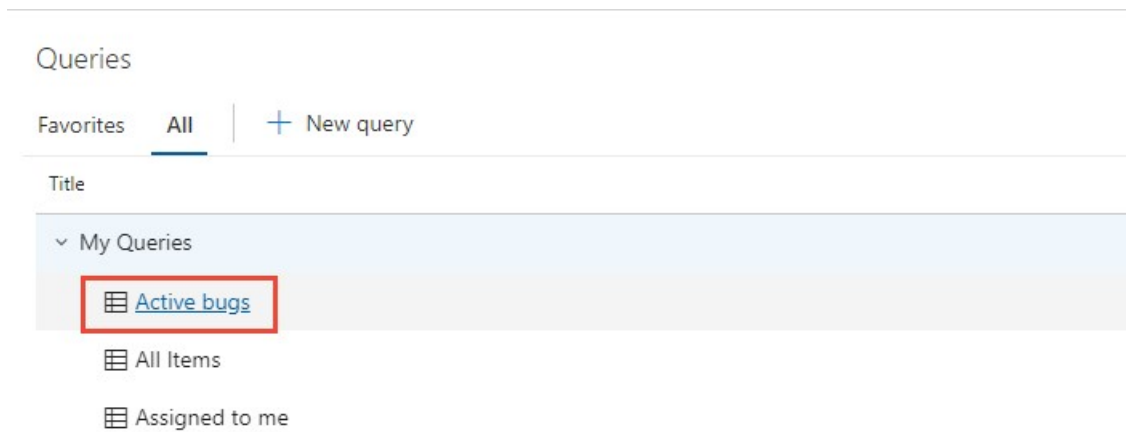
#### 💡 Dica

Queries you or your team have favorited show up on the **Favorites** page. Queries you have favorited along with other objects also appear on your **Project** page. To learn more, see [Set personal or team favorites](#).

## Open, edit, and save a query

The easiest way to define a query is to start with an existing shared query. The following example shows how to find all closed bugs by modifying the *Active Bugs* shared query provided with the Agile process template. Examples are based on the user interface provided through the web portal.

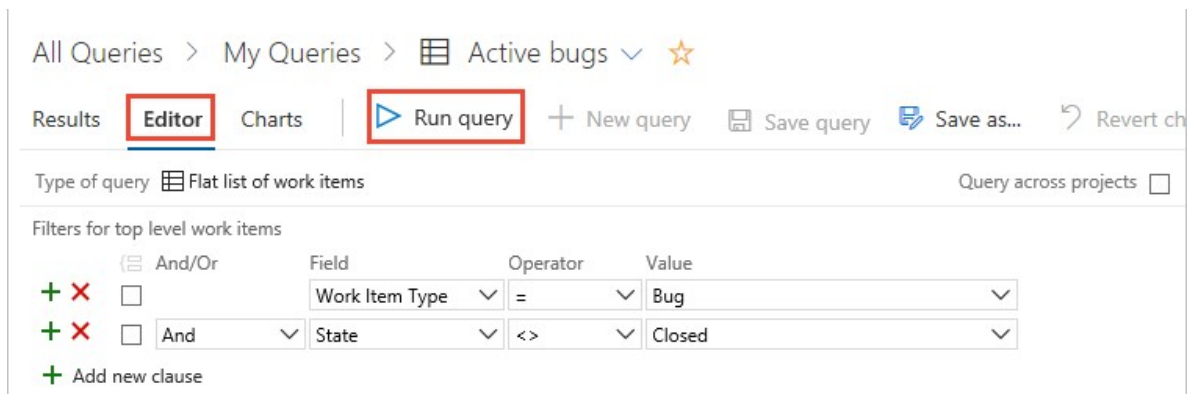
1. Open a shared query. For example, from the web portal, open the *Active Bugs* or similar flat list query.



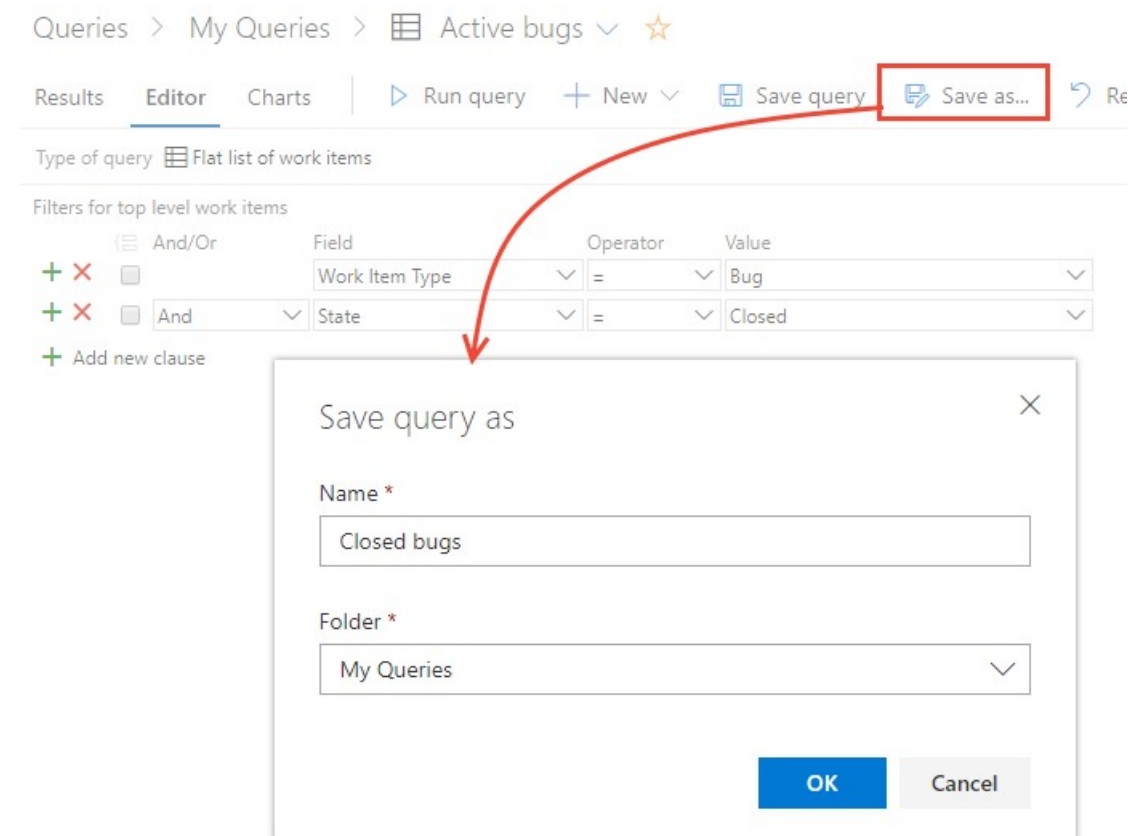
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If you're working in Visual Studio Team Explorer, open the **Work** page to access your queries and shared queries. If Team Explorer isn't visible, choose **View>Team Explorer** from the top level menu.

- Edit the query to find closed bugs and then run the query. Use **+** to insert a clause above the current clause. Use **X** to delete a clause. Queries are automatically scoped to the current project. To find work items defined in several projects, see [Query across projects](#).



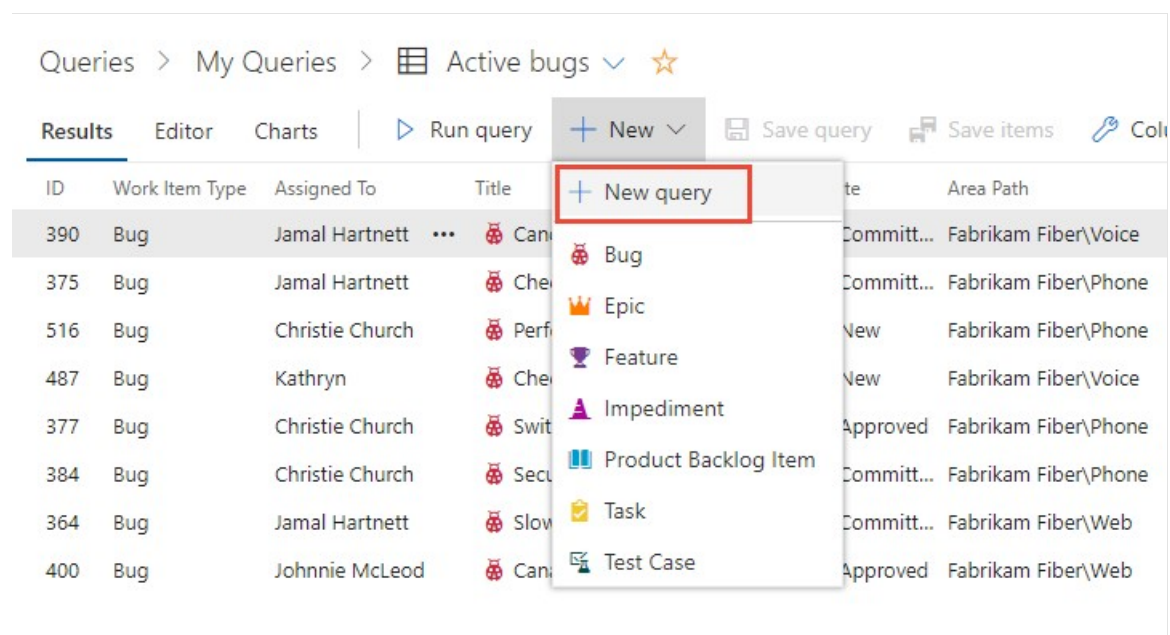
- Save the query to your **My Queries** folder.



To save a query to the **Shared Queries** folder, you need to be a member of the [Project Administrators group](#), or have your **Contribute** permissions on the folder set to **Allow**. To learn more, see [Set query permissions](#).

## Create a query

You can start a fresh, new query from the **Queries** tab in the web portal or the **Work Items** tab in Team Explorer.



## Define a clause

You create a query by defining one or more clauses. Each clause defines a filter criteria for a single field. Choose **Add new clause** to add another clause and then choose the **Field**, **Operator**, and **Value** for that clause.

Type of query Flat list of work items Query across projects ☐

Filters for top level work items

	And/Or	Field	Operator	Value
	<input type="checkbox"/> And/Or	Work Item Type	=	Bug
	<input type="checkbox"/> And	State	Was Ever	Closed
	<input type="checkbox"/> And	Changed Date	>=	@Today - 30
Add new clause				

For example, you can search for all work items assigned to you by specifying the **Assigned To** field, the equals (=) operator, and the @Me macro which represents your user identity.

### Sample query clause

And/Or	Field	Operator	Value
And	Assigned To	=	@Me

For a quick reference of the operators available based on the field data type, see [Query index quick reference](#).

All clauses you add are added as an **And** statement. Choose **Or** to change the grouping. You group clauses to ensure that the clause statements are executed in the sequence required.

### Checklist for how to define a query clause

1. In the first empty row, under the **Field** column heading, choose the down arrow to display the list of available fields, and choose an item in the list.

For more information, see [Query Fields and Values](#).

2. In the same row, under the **Operator** column heading, choose the down arrow to display the list of available operators, and choose an item in the list.

For more information, see [Operators](#).

3. In the same row, under the **Value** column heading, either type a value, or choose the down arrow, and choose an item in the list.

For more information about how to use a macro or variable to specify the current project, user, date, or other selection, see [Variables](#).

4. To add a clause, choose **Click here to add a new clause** or **Add a new clause**.

You can add a clause to the end of the query, insert a clause after an existing clause (), and remove () , group () , and ungroup () clauses as needed.

## And/Or logical expression

You specify **And** or **Or** to create logical expressions of your query clauses. Specify **And** to find work items that

meet the criteria in both the current clause and the previous clause. Specify **Or** to find work items that meet the criterion in either the current clause or the previous clause.

You can add one new clause for each work item field in order to refine your search criteria, so that it returns only the set of work items that you want. If you do not receive the results that you expect from your query, you can add, remove, group, or ungroup query clauses to refine your query results.

Query clauses can be grouped to operate as a single unit separate from the rest of the query, similar to putting parentheses around an expression in a mathematical equation or logic statement. When you group clauses, the **AND** or **OR** for the first clause in the group applies to the whole group.

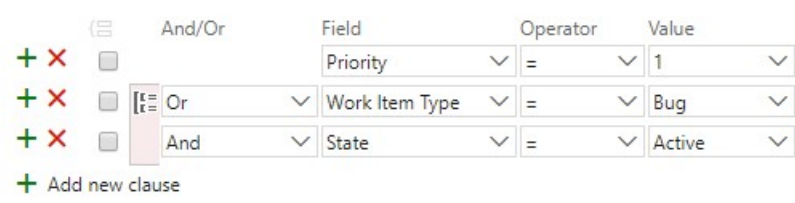

As the following example shows, the grouped clauses are translated to the corresponding logical expression. The first expression returns work items that are priority 1, as well as all active bugs of any priority. The second expression returns all active priority 1 work items, plus all priority 1 bugs whether they are active or not.


Grouped clauses	Logical expression												
<table><tr><td></td><td>Priority</td><td>=</td><td>1</td></tr><tr><td>Or</td><td>Work Item Type</td><td>=</td><td>Bug</td></tr><tr><td>And</td><td>State</td><td>=</td><td>Active</td></tr></table>		Priority	=	1	Or	Work Item Type	=	Bug	And	State	=	Active	Priority=1 OR (Work Item Type=Bug AND State=Active)
	Priority	=	1										
Or	Work Item Type	=	Bug										
And	State	=	Active										
<table><tr><td></td><td>Priority</td><td>=</td><td>1</td></tr><tr><td>And</td><td>Work Item Type</td><td>=</td><td>Bug</td></tr><tr><td>Or</td><td>State</td><td>=</td><td>Active</td></tr></table>		Priority	=	1	And	Work Item Type	=	Bug	Or	State	=	Active	Priority=1 AND (Work Item Type=Bug OR State=Active)
	Priority	=	1										
And	Work Item Type	=	Bug										
Or	State	=	Active										

## Group clauses

Grouped clauses operate as a single unit separate from the rest of the query, similar to putting parentheses around a mathematical equation or logic expression. The And or Or operator for the first clause in the group applies to the whole group.

In the next example, the first expression returns all work items that are priority 1 and all active bugs of any priority. The second expression returns all active priority 1 work items and all priority 1 bugs, whether they are active or not.

Grouped clauses	Logical expression
	Priority = 1 OR (Work Item Type = Bug AND State=Active)
	Priority = 1 AND (Work Item Type = Bug OR State=Active)

To group one or more clauses, select them and then choose the  group clauses icon.

	And/Or	Field	Operator	Value
+ X	<input type="checkbox"/>	Priority	=	1
+ X	<input checked="" type="checkbox"/>	Work Item Type	=	Bug
+ X	<input checked="" type="checkbox"/>	State	=	Active

+ Add new clause

You can also group several grouped clauses by checking the boxes of each clause that has already been grouped, and then choose the group clauses icon.

Type of query Flat list of work items Query across projects ☐

Filters for top level work items

	And/Or	Field	Operator	Value
+ X	<input type="checkbox"/>	Area Path	Under	Fabrikam Fiber\Service Delivery
+ X	<input type="checkbox"/>	Iteration Path	Under	Fabrikam Fiber\Release 1\Sprint 3
+ X	<input type="checkbox"/>	Assigned To	Was Ever	[Fabrikam Fiber]\Service Delivery
+ X	<input type="checkbox"/>	Work Item Type	=	Bug
+ X	<input type="checkbox"/>	Work Item Type	=	User Story
+ X	<input type="checkbox"/>	State	In	New,Active,Resolved
+ X	<input type="checkbox"/>	Changed Date	>=	@Today - 30
+ X	<input type="checkbox"/>	Created Date	>=	@Today - 7

+ Add new clause

If your query results do not return your expected set of work items, follow these steps:

- Make sure that each clause is defined as you intended.
- Verify And/Or assignments to each clause. If your results contain more work items than expected, often an Or clause is present instead of an And clause.
- Determine if you need to group or change the grouping of the query clauses and the And/Or assignments of each grouped clause.
- Add more query clauses to refine your query filter criteria.
- Review the options available to specify [fields](#), [operators](#), and [values](#).

## Ungroup a clause

To ungroup a clause, choose the ungroup clauses icon for the grouped clause.

## Use a tree query to view hierarchies

Use the tree query () to view a multi-tiered, nested list of work items. For example, you can view all backlog items and their linked tasks. Expand (Expand node (▶)) or collapse (Collapse node (◀)) leaf nodes to focus on different parts of the tree.



All Queries &gt; My Queries &gt; Fabrikam Fiber Team - Backlog items ▾ ☆

Results Editor Charts | ▶ Run query + New ▾ Save query Save items

ID ↑	State	Assigned To	Effort	Title
366	Committed	Jamal Hartnett	8	Hello World Web Site
538	In Progress	Johnnie McLeod		Design welcome screen
368	To Do	Jamal Hartnett		Change background color
369	To Do	Christie Church		About screen
399	In Progress	Jamal Hartnett		Standardize on form
364	Committed	Jamal Hartnett	8	Slow response on information form
383	To Do	Christie Church		Fix performance issues
539	In Progress	Jamal Hartnett		Standardize
352	New	Raisa Pokrovskaya		Add an information form
536	To Do	Raisa Pokrovskaya		Auto-complete user's information
537	To Do	Raisa Pokrovskaya		Auto-save

Define the filter criteria for both parent and child work items. To find linked children, select **Match top-level work items first**. To find linked parents, select **Match linked work items first**.

Type of query **Tree of work items** Query across projects ☐

Filters for top level work items

	And/Or	Field	Operator	Value
+ X	<input type="checkbox"/>	Work Item Type	In	Product Backlog Item,Bug
+ X	<input type="checkbox"/> And	Area Path	Under	Fabrikam Fiber
+ X	<input type="checkbox"/> And	Iteration Path	Under	Fabrikam Fiber
+ X	<input type="checkbox"/> And	State	In	New,Approved,Committed

+ Add new clause

Filters for linked work items

	And/Or	Field	Operator	Value
+ X	<input type="checkbox"/>	Work Item Type	In	Product Backlog Item,Bug
+ X	<input type="checkbox"/> And	ID	>	0
+ X	<input type="checkbox"/> And	Iteration Path	Under	Fabrikam Fiber
+ X	<input type="checkbox"/> And	State	In	New,Approved,Committed
+ X	<input type="checkbox"/> Or	Work Item Type	In	Task
+ X	<input type="checkbox"/> And	State	In	To Do,In Progress,Done

+ Add new clause


Filter options Match top-level work items first Type of tree Parent/Child

### ❗ Observação

You can't construct a query that shows a hierarchical view of Test Plans, Test Suites, and Test Cases. These items aren't linked together using parent-child link types. You can [view the hierarchy through the Test>Test Plans page](#).




## Use direct links to view dependencies

Use the direct links query () to track work items that depend on other tracked work, such as tasks, bugs, issues, or features. For example, you can view backlog items that depend on other items being implemented or a bug being fixed.

ID	Work Item Type	Title
59	Product Backlog Item	Welcome Back
94	Bug	Log-in button needs to be more prominent on Welcome page
71	Product Backlog Item	Add an information form
97	Product Backlog Item	Hello World web site
95	Bug	Simplify the search experience
145	Bug	Search function doesn't yield

Use the direct links query to track dependencies your team has that other teams work on, or manage commitments your team has made to other teams. Specify the filter criteria for both top and linked work items, and select the types of links used to filter the dependencies.

Type of query  Work items and direct links Query across projects ☐

Filters for top level work items

	Field	Operator	Value
<input type="checkbox"/> And/Or	Work Item Type	=	Product Backlog Item
<input type="checkbox"/> And	State	=	[Any]

[+ Add new clause](#)

Filters for linked work items

	Field	Operator	Value
<input type="checkbox"/> And/Or	Work Item Type	=	[Any]

[+ Add new clause](#)

Filter options

☒ Only return items that have matching links

Types of links

- ☐ Return links of any type
- ☒ Return selected link types
  - ☐ Affected By
  - ☐ Affects
  - ☐ Child
  - ☐ Duplicate
  - ☐ Duplicate Of
  - ☐ Parent
  - ☐ Predecessor
  - ☐ Referenced By
  - ☐ References
  - ☒ Related
  - ☐ Shared Steps

Filter your first-tier list of work items by choosing one of these options:

- **Only return work items that have the specified links:** First-tier work items are returned, but only if they have links to work items specified by the linked work items filter criteria.
- **Return all top level work items:** All first-tier work items are returned regardless of the linked work items filter criteria. Second-tier work items that are linked to the first tier are returned if they match the linked work items filter criteria.
- **Only return work items that do not have the specified links:** First-tier work items are returned, but only if they do not have links to work items specified by the linked work items filter criteria.

To learn more about each link type, see [Linking, traceability, and managing dependencies](#).

## Query across projects

By default, shared queries and new queries are scoped to the current project. However, you can create queries to find work items defined within the project collection. You save cross-project queries under a specific project.

To list work items defined in two or more projects, checkmark **Query across projects**. For example, the following query finds all features created in all projects within the last 30 days.

The screenshot shows the 'Query Editor' interface with the 'Editor' tab selected. At the top, there are icons for saving, refreshing, running, and undo, along with 'Column options' and 'Copy query URL'. Below this, the 'Type of query' is set to 'Flat list of work items'. A checkbox labeled 'Query across projects' is checked and highlighted with an orange circle. Under 'Filters for top level work items', there are three filter clauses: 'Work Item Type' is set to 'Feature', 'State' is set to '[Any]', and 'Created Date' is set to '@Today - 30'. Each clause has a '+' and a '-' icon to its left. At the bottom, there is a '+ Add new clause' link.

With the **Query across projects** checked, you can add the Team Project field to filter to a select number of projects.

This screenshot shows the same 'Query Editor' interface as the previous one, but with an additional filter clause. The 'Team Project' field is now selected in the 'Field' dropdown, and the 'Value' is set to 'Fabrikam, Support, Feedback', which is highlighted with an orange circle. The other filter clauses remain the same: 'Work Item Type' is 'Feature', 'State' is '[Any]', and 'Created Date' is '@Today - 30'. The 'Query across projects' checkbox remains checked.

### ⚠ Observação

Separate multiple project names with the list separator that corresponds to the regional settings defined for your client computer, for example, a comma (,).

The *Team Project* field becomes available only after you check **Query across projects**. Moreover, when **Query across projects** is unchecked, only those fields from those WITs defined in the current project appear in the Field drop-down menu. When **Query across projects** is checked, all fields from all WITs defined in all projects in the collection appear in the Field drop-down menu.

## Taskboard versus query list items

You may notice and wonder why the contents of the taskboard differ from those listed with its created query?

To learn more, see [taskboard items versus query list items](#).

## Export a query

From the query editor in Team Explorer, use the File menu to save a query as a .wiq file. When you create a project, the shared queries are created based on [.wiq files defined in a process](#).

See also:

- [Syntax for the Work Item Query Language \(WIQL\)](#)
- [Wiql Editor, a Marketplace extension](#)

### ⚠ Observação

The WIQL length must not exceed 32K characters. The system won't allow you to create or run queries that exceed that length.

## Related articles

That's the basics about using queries. For an index of query examples, see [Create managed queries](#). To add a custom field to track additional data, see [Customize your work tracking experience](#).

- [Ad hoc versus managed queries](#)
- [Add work items](#)
- [Chart a flat-list query](#)
- [Change column options](#)
- [Define a query as a hyperlink](#)
- [Work item field index](#)
- [Query keyboard shortcuts](#)

If you want to export a query to Excel, you can do that from [Excel or Visual Studio/Team Explorer](#). Or, to export a query directly from the web portal Queries page, install the [VSTS Open in Excel Marketplace extension](#). This extension will add in **Open in Excel** link to the toolbar of the query results page.

## REST API

To programmatically interact with queries, see one of these REST API resources:

- [Azure DevOps Services REST API Reference](#)
- [Queries](#)
- [Work item query language](#)
- [Work item query language \(WIQL\) syntax](#)
- [Fetch work items with queries programmatically](#)