



Railinc Advanced Query User Guide



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Welcome to Railinc Advanced Query

The Advanced Query Application is a powerful search engine that accesses three mission critical Railinc applications. In one query, railcar owners and other users can search Umler®, Component Tracking/Registry, Car Repair Billing, and any combination of these applications. For example, a user may request to view all equipment IDs, component IDs and component locations with wheels made by ABC Industries. All queries may be saved for future use. By combining these vast information resources, the application provides users with advanced analytic capabilities to help better manage their businesses.

Advanced Query is a web-based application within Umler/Component Tracking/Registry that allows users to create, run, export, edit, and delete custom queries based on Boolean concepts.

The current phase focuses on:

- Component Registry/Tracking elements
- A subset of Umler elements
- A subset of Car Repair Billing elements

Future development might include elements from other Railinc applications.

Prerequisites

The Railinc Advanced Query and Component Registry operates as a part of Umler system. Each user must have an SSO ID and be authorized to use Umler. For more information on obtaining an SSO ID and requesting application access, see the [Railinc SSO and Launch Pad User Guide](#) and the [Umler User Guide](#). SSO information for Umler administrators is available in the [Single Sign-On Administrator Guide](#).

Each user must be familiar with:

- Logging In/Out
- Railinc common interface component navigation

System Requirements

The basic computer requirements for Component Registry are the same as for Umler. For more information on system requirements, see the [Railinc UI Dictionary](#).

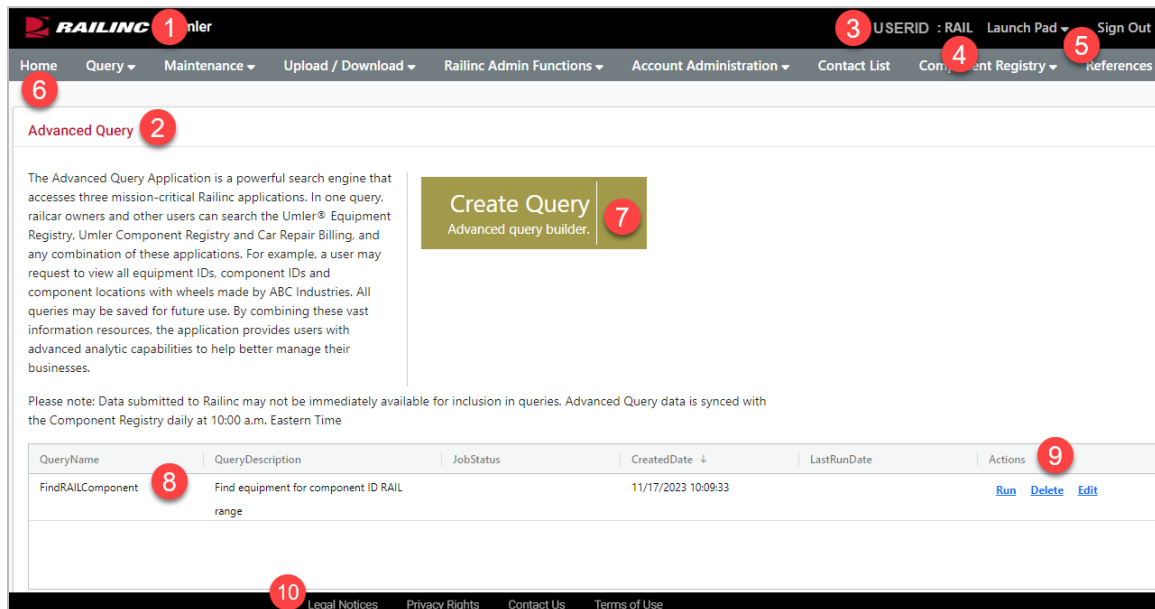
User Interface

The Railinc Advanced Query interface provides the same navigational tools found in most Windows applications and internet sites.

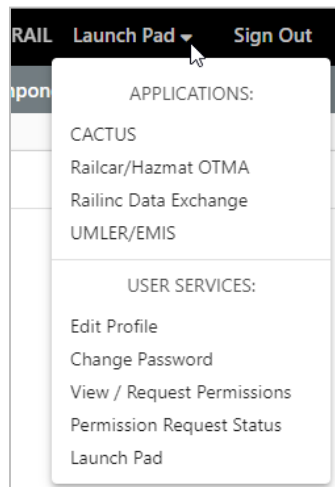
Advanced Query Layout

The Advanced Query Home page has a following structure:

Exhibit 1. Railinc Advanced Query Page Layout



- 1 **Logo**—Railinc logo. Logo is a link to the Railinc corporate website.
- 2 **Title**—Name of the application.
- 3 **User ID**—Logged in user.
- 4 **Company**—Company user is representing.
- 5 **Navigation Links:**
 - **Launch Pad**—Link where the user can click to go directly to the SSO Launch pad, or hover over to display a dual drop-down menu to switch to other authorized Railinc applications (left side) or go to the SSO User Services functions (right side), e.g., change passwords, request other applications, etc. ([Exhibit 2](#)).

Exhibit 2. Launch Pad Drop-Down Menu

- **Sign Out**—Logs out of all open applications and returns to the Railinc SSO login page.
- 6 Home**—Opens the Umler Home page.
 - 7 Create Query**—Click inside this box to open the Query Builder wizard ([Exhibit 8](#)).
 - 8 Saved Query Table**—The title of the specific application task page.
 - 9 Query Actions**—A column of the query table with links to **Run**, **Delete**, **Edit** and **Download** an existing query.
 - 10 Legal and Contact Links**—This area at the bottom page contains links to applicable legal notices, privacy rights, terms of use, and the **Contact Us** link opens a page of contact information (Railinc support).

Getting Started

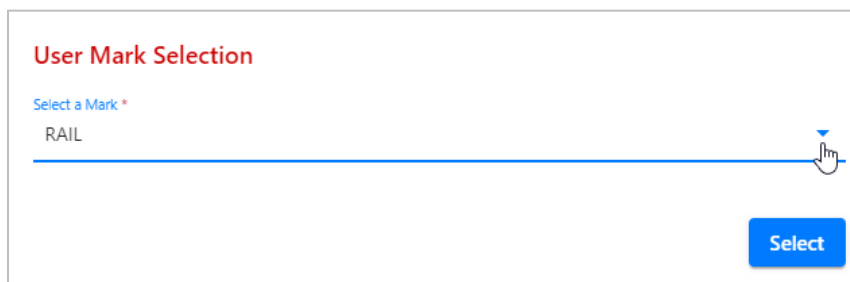
The Umler application is accessed using the Railinc Single Sign-On (SSO), which can be accessed from the Railinc portal at <https://public.railinc.com>. The **Customer Login** link is located at the upper right of the page.

Logging In

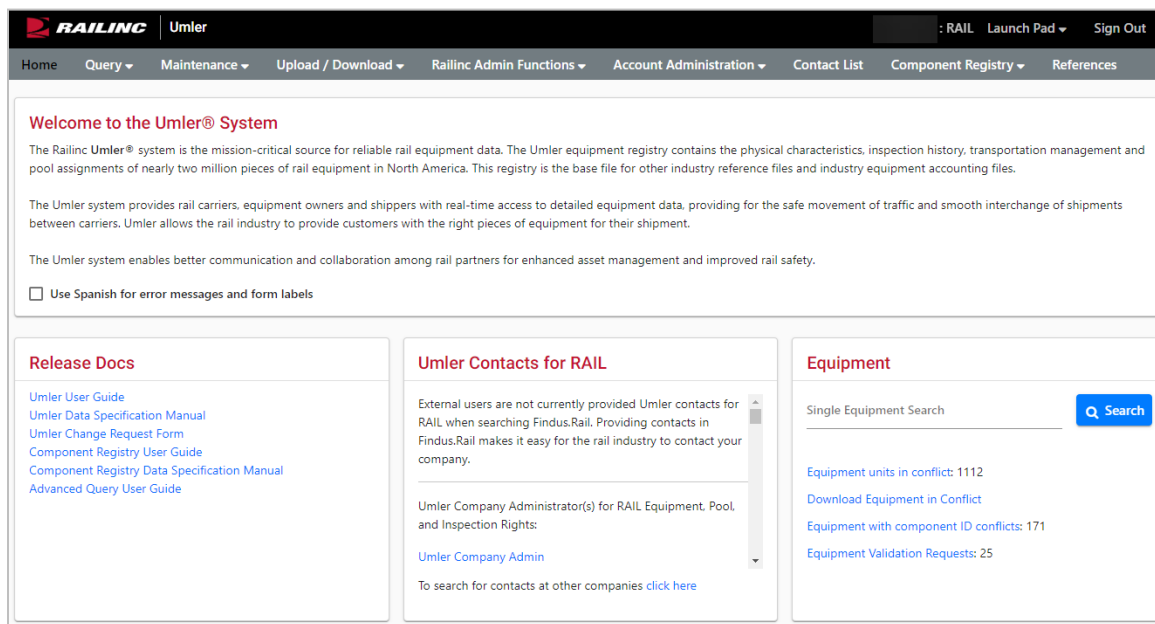
Use the following procedure to log into Umler:

1. Open your internet browser and enter <https://public.railinc.com> to open the Railinc website.
2. Select the **Customer Login** link in the upper right of the page. The Account Access page is displayed.
3. Enter your **User ID** and **Password**. Select **Sign In**. The Railinc Launch Pad is displayed.
4. Select **Umler** in the My Applications section.
 - a. If you are authorized to act on behalf of one company, the Umler Home/Welcome page is displayed ([Exhibit 4](#)).
 - b. If you are authorized to act on behalf of more than one company, the User Mark Selection pop-up is displayed ([Exhibit 3](#)). Enter or select the company you want to represent and click the **Select** button. The Umler Home page is displayed ([Exhibit 4](#)). You can change companies at any time by selecting the company mark next to your user ID in the top right, and from the User Mark Selection pop-up, select a new company.

Exhibit 3. Select Your Company



Select **Component Registry > Query > Advanced Query** from the menu. This user guide provides guidance on how to use Advanced Query. Information for other Component Tracking/Registry menu items is available in the [Umler Component Tracking User Guide](#).

Exhibit 4. Umler Welcome/Home

Logging Out

If the SSO Login is still needed for other SSO applications, select the **Launch Pad** link, which closes Umler and returns to the Launch Pad/SSO Welcome page where other applications can be selected.

On any Umler page, select the **Sign Out** link at the upper right of the page. The Railinc SSO login page is displayed.

Advanced Query Primer

This section of material is provided to give users new to queries enough information to successfully create, run, and edit custom queries.

Inputs

The following list of operators is accepted currently:

- **Equals**—Accepts a single value
- **Does not Equal**—Accepts a single value
- **Greater Than**—Accepts a single value
- **Greater Than or Equal to**—Accepts a single value
- **Less Than**—Accepts a single value
- **Less Than or Equal to**—Accepts a single value
- **In**—Accepts a comma separated list of values
- **Not In**—Accepts a comma separated list of values

Note: Currently only 'AND' as the operator between input values is available. All inputs must be true for the query to succeed. Additional operators may be added in the future.

Outputs

- Outputs are currently provided in CSV format.
- The output list of fields is the same as the input list.
- Select **Include Query Fields** to automatically return the fields selected for input and remove any fields from the list.
- Selected fields will return in the order they were added to the query. Sorting of the fields may be supported in the future.

Saving

To save a query, follow the instructions provided in [Creating a Query](#). Enter a name and description for the query in the Additional Information tab ([Exhibit 16](#)). Saved queries are displayed on the Advanced Query page ([Exhibit 1](#)).

Viewing/Running/Other Actions

From the list of saved queries, you can:

- Run the query and retrieve results from this list.

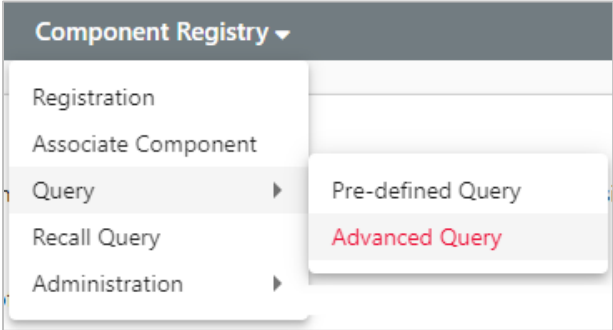
Note: Rerunning the query overwrites the previous results.

- Edit a query from the list, using the same interface as creating.
- Delete queries from the list that are no longer needed.
- Export the results (in CSV format). Other formats may be supported in the future.

Advanced Query

Select **Query** to display the Query menu.

Exhibit 5. Query Menu Items



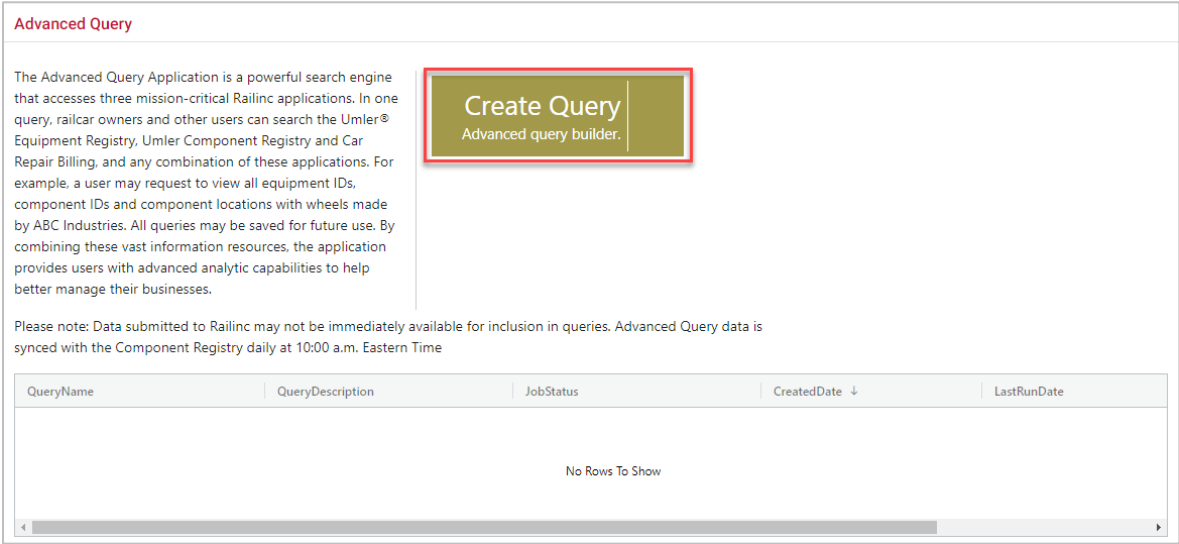
The Component Registry Query menu has the following functions:

Exhibit 6. Component Registry Query Menu Functions

- Pre-defined Query** Authorized users can execute standard queries as described in the [Umler Component Tracking User Guide](#).
- Advanced Query** Set up custom queries using multiple criteria with Boolean operators that can be saved, run, and edited ([Exhibit 7](#)).

When Advanced Query is selected from the Query menu, the Advanced Query page is displayed.

Exhibit 7. Advanced Query

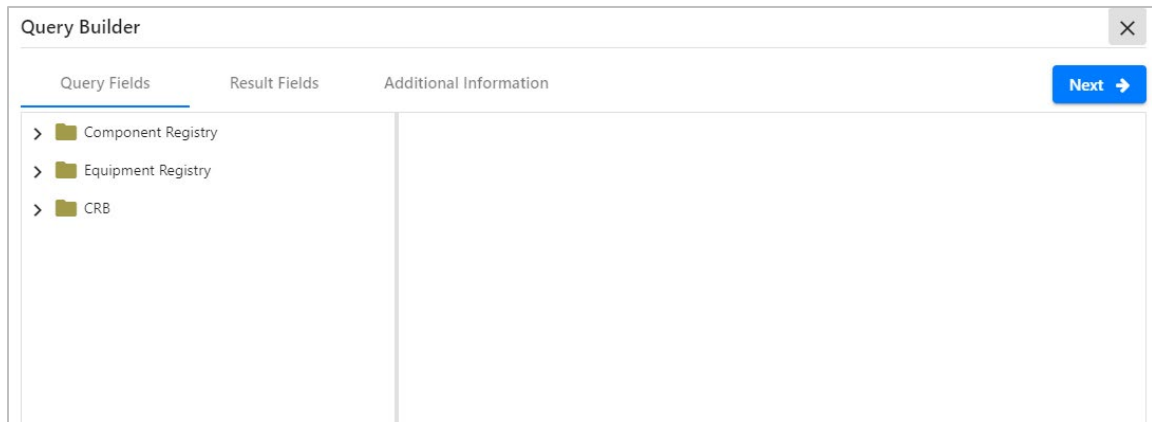


Creating a Query

Use the following procedure to create a query:

1. Click inside the large **Create Query** box ([Exhibit 7](#)) on the Advanced Query page. The Query Builder wizard opens with the Query Fields tab displayed.

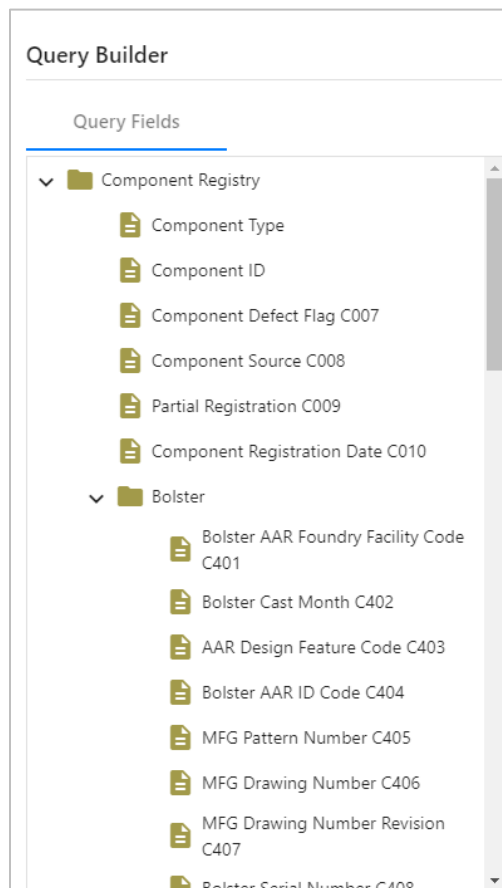
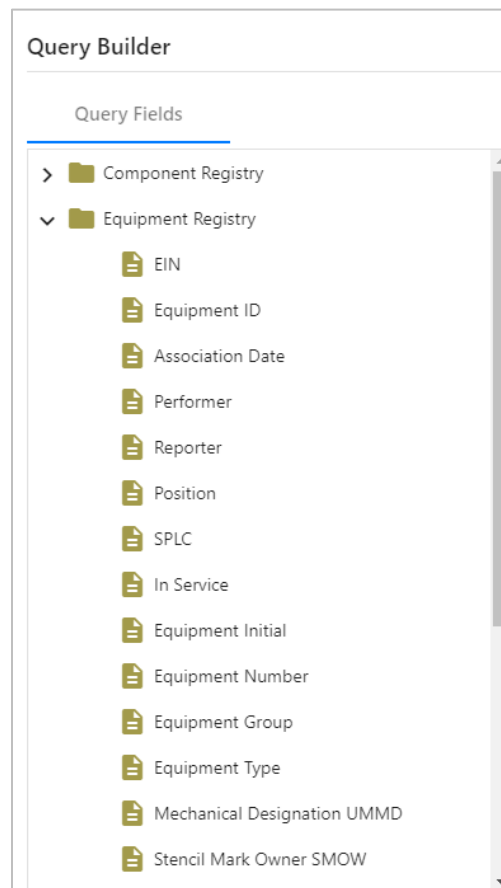
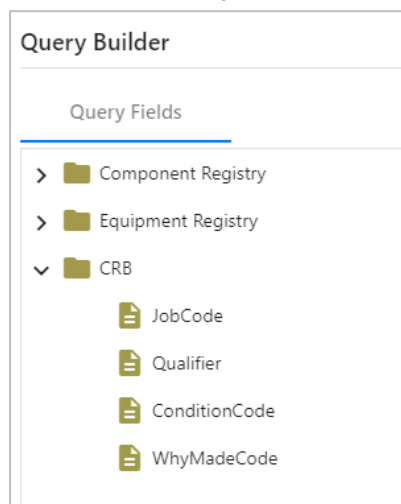
Exhibit 8. Query Builder – Query Fields Tab



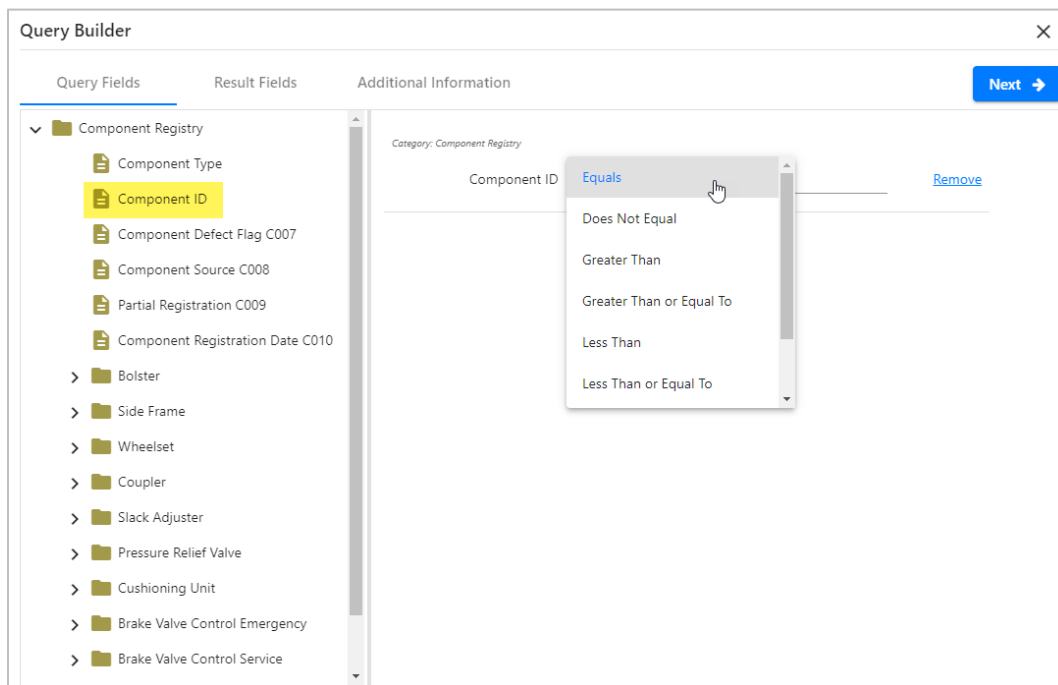
Query criteria can be selected from the following directories:

- **Component Registry**—All elements from the Component Registry by component type ([Exhibit 9](#)).
- **Equipment Registry**—Selected element data from Umler ([Exhibit 11](#)).
- **CRB**—Selected data from the Car Repair Billing system ([Exhibit 10](#)).

Expand and collapse each directory using the arrows on the left.

Exhibit 9. Component Registry/Bolster Expanded**Exhibit 11. Equipment Registry Expanded****Exhibit 10. CRB Expanded**

2. Select criteria from the lowest levels of the directories. Each time an element is selected, an entry is made on the right side of the tab ([Exhibit 12](#)).

Exhibit 12. Adding Query Criteria

3. Remove criteria by selecting the **Remove** link to the right of the criteria.
4. Set the appropriate operator using the drop-down list. The default is **Equals**.
5. Enter the value into the field next to the operator. Use the following helpful references:
 - a. [Component Tracking Data Specification Manual](#) for Component Registry elements.
 - b. [Umler Data Specification Manual](#) for Equipment Registry elements.
 - c. The [Field Manual](#) of the AAR Interchange Rules for CRB elements.
6. Repeat steps 2–5 as needed, adding desired criteria. [Exhibit 13](#) shows sample query criteria.

Exhibit 13. Sample Query Criteria

Query Builder

Query Fields Result Fields Additional Information **Next** →

▼ **Component Registry**

- Component Type
- Component ID
- Component Defect Flag C007
- Component Source C008
- Partial Registration C009
- Component Registration Date C010

> **Bolster**

> **Side Frame**

▼ **Wheelset**

- Wheelset Facility Code C003
- Wheelset Assembly Timestamp C004
- Wheelset Extended Codes C005
- Component Vendor Shipment Info C006
- Purchased Core Turned

Category: Component Registry

Component ID Greater Than or Equal... RAIL3501 [Remove](#)

Category: Component Registry

Component ID Less Than or Equal... RAIL3999 [Remove](#)

Category: Wheelset

Axle Nominal Diameter C305 Equals 6.5 [Remove](#)

Category: Equipment Registry

Umler Owner UMOW Equals RAIL [Remove](#)

7. Select **Next** to move to the Results Fields Tab ([Exhibit 14](#)).

Exhibit 14. Query Builder – Results Fields Tab

Query Builder

Query Fields **Result Fields** Additional Information ← **Back** **Next** →

> **Component Registry**

> **Equipment Registry**

> **CRB**

☐ Include Query Fields

This tab determines what data is included in the output file.

8. Check **Include Query Fields** to include selected query criteria in the output.
9. Add other fields (from any directories). [Exhibit 15](#) shows sample results fields.

Exhibit 15. Include Query Results

10. Review the selected criteria for accuracy. If some query criteria must be adjusted or removed, select **Back** (or select the **Query Fields** tab) to return to the Query Fields tab.
11. Select **Next** to go to the Query Builder Additional Information tab ([Exhibit 16](#)).

Exhibit 16. Query Builder Additional Information

12. Enter the **Name** for the query, and a brief **Description**. Name is limited to 36 characters. Description is limited to 1,000 characters.
13. Select **Save** to save the named query. The Advanced Query page displays with the new query listed in the table at the bottom of the page ([Exhibit 17](#)). The Job Status and Last Run Date columns remain blank until the query has been run for the first time. The time for Created Date and Last Run Date is shown as Eastern Time.

Exhibit 17. Advanced Query Saved Queries

QueryName	QueryDescription	JobStatus	CreatedDate ↓	LastRunDate	Actions
Suspect Wheel Diameter	Rail-owned with diameter		11/17/2023 12:29:06		Run Delete Edit
FindRAILComponent	Find equipment for component ID RAIL range	Running	11/17/2023 10:09:33	11/17/2023 10:23:11	Run Delete Edit

14. Actions allowed for queries include:

- a. [Run](#)—Select to execute the query. A notification is sent via email.
- b. [Edit](#)—Select to view and/or edit the query to reuse for a similar purpose.
- c. [Download](#)—View or download a CSV file with the latest query results. This is only available after a successful Run action.
- d. [Delete](#)—Select to delete a query that is no longer needed.

Running a Query

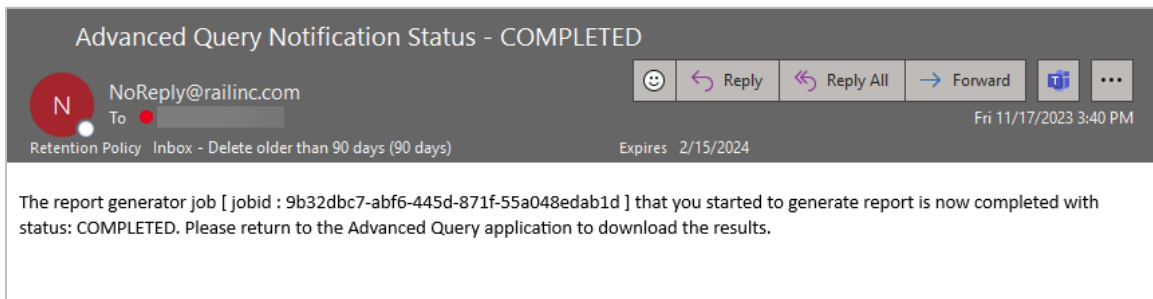
After a query has been created as described in [Creating a Query](#), run it to obtain results.

Use the following procedure to run a query:

1. Locate the query in the table on the Advanced Query Home page ([Exhibit 17](#)).
2. Select the **Run** link in the query's **Actions** column. Job Status changes through the process:
 - When there is no status (column is blank), the report has not been run as seen in the first row of [Exhibit 17](#)
 - **Submitted** – report has been successfully submitted
 - **No Content** – report has been submitted and there is no content for the selected criteria
 - **Running** – report has been submitted and is currently running as seen in [Exhibit 17](#)
 - **Done** – report has been submitted and completed as seen in [Exhibit 19](#)

Once processing has completed, you will receive an email letting you know the request has been completed and to return to Advanced Query to download the results ([Exhibit 18](#)).

Exhibit 18. Query Complete Email Notification



3. On the Advanced Query Home page, select the browser Refresh (or **F5**). The page is redisplayed with the query results ([Exhibit 19](#)).

Exhibit 19. Query Completed

QueryName	QueryDescription	JobStatus	CreatedDate ↓	LastRunDate	Actions
FindComponentRail	Find Component ID for RAIL	Done	11/17/2023 16:26:20	11/17/2023 16:40:16	Run Edit Delete Download

- a. If the query produced results, the status field shows **Done**, and a **Download** link is available to view or download. See [Downloading Query](#)
- b. If a query does not produce results, the Job Status field shows **No Content**. Possible reasons for this include:
 - A recent transaction might not be included in the database yet (perhaps run later)
 - There might be typographical errors in the query, or conflicting settings (edit)
 - **No Content** might be the desired result (for example, cars with defect flag set to yes)

The user can choose to [Run](#) the query again, [Edit](#) the query, or [Delete](#) the query.

Note: Rerunning a query overwrites the previous results.

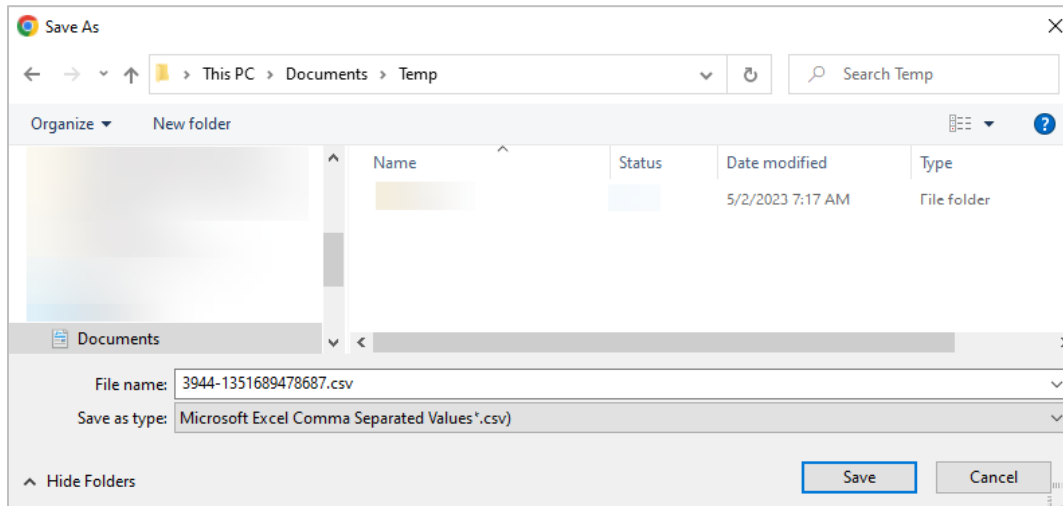
Downloading Query Results

When a query has run successfully and has results, the **Download** link is displayed. The user can choose to view or download the query results:

To view or download query results, select its **Download** link in the query's **Actions** column. The following shows how the download occurs with Google Chrome, but this may vary depending on the browser you use:

1. The Save As pop-up is displayed ([Exhibit 20](#)).

Exhibit 20. File Download



2. The default name is shown in the **File Name** field but can be changed.
3. Select **Save**. The results are saved as a comma separated file that can be opened with Microsoft Excel.
4. Select the file on your computer to open it.

Exhibit 21. Query Results Opened in Spreadsheet

	A	B	C	D	E
1	Equipment ID	Component Type	Axle Nominal Diameter C305:1:1	Equipment Initial	Component ID
2	RAIL0000003581	WHEELSET	6.5 RAIL		RAIL0456123791
3	RAIL000000303	WHEELSET	6.5 RAIL		RAIL0000007152
4	RAIL0000000022	WHEELSET	6.5 RAIL		RAIL0789456846
5	RAIL0000000022	WHEELSET	6.5 RAIL		RAIL0789456846
6	RAIL0000000022	WHEELSET	6.5 RAIL		RAIL0789456846
7	RAIL0000000022	WHEELSET	6.5 RAIL		RAIL0789456846
8	RAIL000000303	WHEELSET	6.5 RAIL		RAIL0000007153
9					

The results display the fields requested during query creation (refer to [Exhibit 15](#)).

Editing a Query

Queries that have failed to produce results might need to be edited, and queries, if successful, might be edited to query other similar criteria (different equipment IDs, Umler ownership, component types, etc.).

Use the following procedure to edit an existing query:

1. Select the **Edit** link ([Exhibit 19](#)) in the **Actions** column for the query you want to edit. The Query Builder wizard opens with existing criteria displayed ([Exhibit 22](#)).

Exhibit 22. Editing a Query

The screenshot shows the 'Query Builder' window with three tabs: 'Query Fields', 'Result Fields', and 'Additional Information'. The 'Additional Information' tab is active, displaying a list of criteria. On the left, under 'Query Fields', there are three expandable categories: 'Component Registry', 'Equipment Registry', and 'CRB'. The 'Additional Information' tab contains four criteria, each with a 'Remove' link:

Category	Field	Operator	Value	Action
Component Registry	Component ID	Greater Than or Equal To	RAIL3501	Remove
Component Registry	Component ID	Less Than or Equal To	RAIL3999	Remove
Wheelset	Axle Nominal Diameter C305	Equals	6.5	Remove
Equipment Registry	Umler Owner UMOW	Equals	RAIL	Remove

A 'Next' button with a right arrow is located in the top right corner of the 'Additional Information' tab.

Each tab in the Query Builder wizard operates as described in [Creating a Query](#).

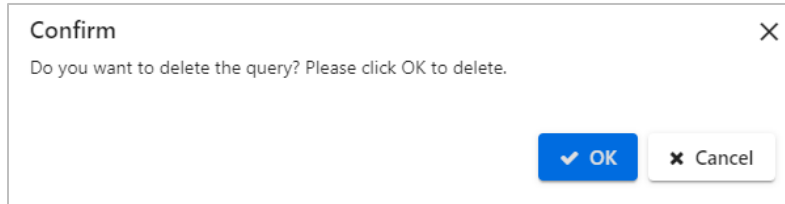
2. Make your desired changes and select **Next**.
3. In the **Additional Information** tab:
 - a. Change the **Name** field and select **Save** to create a new query and keep the original query.
 - b. Leave the **Name** field unchanged and select **Save** to overwrite the existing query and lose the original query.

Once your query is saved, the Advanced Query page is redisplayed with the updated query. [Run](#) the edited query as needed.

Deleting a Query

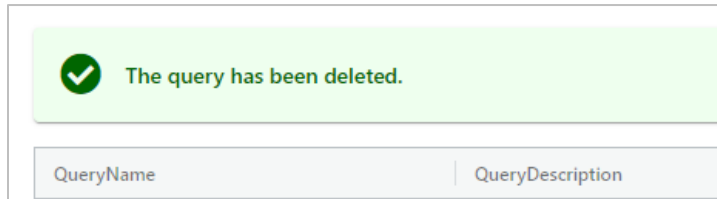
When a query is no longer needed, the user can delete the query by selecting the **Delete** link ([Exhibit 19](#)) in the **Actions** column for the appropriate query. A confirmation pop-up is displayed ([Exhibit 23](#)).

Exhibit 23. Confirm Delete Query



If unsure about the deletion, select **Cancel**. Otherwise, select **OK**. A message showing the query has been deleted is displayed ([Exhibit 24](#)).

Exhibit 24. Query Deletion Message



Glossary

AAR—The [Association of American Railroads](#).

Component Tracking—[Component Tracking](#) was originally named Comprehensive Equipment Performance Monitoring (CEPM). Components are registered in the Umler Component Registry and associated to equipment through inputs from CRB and EHMS.

Component ID—Uniquely identifiable information that includes 14 characters and is comprised of a company ID or Mark and up to 10-digit serial number. This component ID is the standard “AAR Component ID” that will be physically applied to the component during assembly.

CRB—[Car Repair Billing](#) enables users to manage billing. Within CRB there are two methods for submitting invoices: the Car Repair Billing Data Exchange (CRBDX) and the Billing Repair Card (BRC) interface.

EHMS—The [Equipment Health Maintenance System](#) communicates the condition of railroad equipment and sends alerts to the responsible parties when repairs are needed via a web-based application.

SPLC—[Standard Point Location Codes](#) are assigned to all stations registered by rail carriers. Between six to nine digits, this numeric code is used to specify the physical location of a station. Presently a minimum of six digits is required with three zeros.

Umler—The [Umler](#) system identifies internal and external dimensions, capacities, weight information, and other specific characteristics of freight cars, as well as intermodal trailers and containers. It also serves as the base file for other standard industry equipment reference and management systems.