

# New Relic Insights

Ask your software questions. Get answers immediately.

Your application generates a sea of data. And within that data hides thousands of morsels of valuable insights about your software, customers, and business. But in order to get those insights, you have to put your scuba gear on and dive deep. You need to collect the data, store it, and present it in a fashion that both technical and business users can understand. And you have to do it fast, which is often impossible when you're dealing with complex systems that aren't built for ad hoc analytics queries.

New Relic Insights solves this exact problem by using real-time data from your production software to deliver fast analytics and more answers to your data questions. Unlike other analytics tools that require expensive software and complex processes for extracting, storing, and presenting data, Insights provides key application data straight out of the box. It removes the time and hassle of traditional analytics by leveraging the data New Relic already has from monitoring the performance of your app to give you instant insight.

## Getting started

If you're already using New Relic APM (whether for Ruby, PHP, Python, Java, Node.js and .NET) or New Relic Mobile (whether iOS or Android), you're all set to start using New Relic Insights. Just make sure you're on the most recent versions of the agent. Check out the [compatibility and agent requirements](#).

Once you've met all of the requirements, go to [newrelic.com/insights](https://newrelic.com/insights) and set up an account.

## Meet the UI

When you first login to Insights, you'll see a Welcome screen offering you a quick tour of the product. Scroll down and start by clicking on **Show me my event data**. This will then walk you through the key components of the solution. Since the deep dive is already within the in-product tutorial, we'll keep this document focused on getting you familiar with the user interface.

You'll likely first notice the three icons at the top of the column on the left-hand side, which we call the New Relic Insights menu bar.



The one on the left will take you to the Query History page, which is where you'll find the NRQL command line tool. This is where you can enter a NRQL statement to query the events database (more on that later).



The icon in the middle goes to the Data Explorer, which allows you to drill down into your available data.



This one on the right goes to a dashboard management interface. Here you'll find a list of dashboards available in your account.

Towards the bottom of the menu bar, you'll see additional links that take you to data management tools (**Manage Data**) and support (**Documentation and Support Forum**).



## The events database

New Relic Insights is powered by a high-performance event database with a unique architecture that does not require indexing. By default, your Insights account comes with two event types. The PageView event is populated with each page view collected from New Relic Browser. The Transaction event collects every server-side transaction processed by your application. The MobileSession event collects every mobile app session processed by your app.

The **Transaction attributes** that come built-in include:

Attribute	Description
<code>name</code>	The name of the invoked web transaction (e.g. <code>Controller/customers/show</code> ).
<code>countryCode</code>	The country from which the browser initiated the page load.
<code>userAgentName</code>	Standard tracking information about the browser initiating the page load.
<code>userAgentVersion</code>	Standard tracking information about the browser initiating the page load.
<code>userAgentOS</code>	Standard tracking information about the browser initiating the page load.
<code>duration</code>	The frontend browser response time.
<code>backendDuration</code>	The backend (app server) response time.
<code>appId</code>	The New Relic application ID.
<code>httpResponseCode</code>	The HTTP response code associated with the transaction. Only available with the Java and PHP agents.

The **PageView attributes** that are available immediately with no customization are:

Attribute	Description
<code>appId</code>	The ID of your application, as recorded by New Relic.
<code>appName</code>	The name of your application. In many cases, this may just be the name of application sever.
<code>name</code>	The name of the controller handling this transaction.
<code>type</code>	The event type. In this case it will always have the value <code>Transaction</code> .
<code>realAgentId</code>	The ID of the New Relic agent reporting.
<code>duration</code>	The total response time of the request.
<code>databaseDuration</code>	The database response time.
<code>externalDuration</code>	The total response time of all externals.
<code>webDuration</code>	The total response time of all Web transactions.
<code>city</code>	The city in which the PageView event occurred (for example, Portland or Seattle).
<code>regionCode</code>	The specific region within a country where the PageView event occurred. In the United States, regions correspond to state codes (for example, WA or OR).

See the [full list](#).



The **MobileSession attributes** that are available right out-of-the-box are:

Attribute	Description
<code>sessionId</code>	Used as a unique identifier to describe an established session.
<code>sessionStartTime</code>	A timestamp that defines when a session has started.
<code>sessionDuration</code>	The length of time, in seconds, for which the session existed.
<code>device</code>	The specific device using the application.
<code>osName</code>	The plaintext name of the operating system (e.g., iOS, Android)
<code>countryCode</code>	The country in which the application is being used.
<code>regionCode</code>	The specific region or locale (in the case of the US, a state or province) in which the application is being used.
<code>appID</code>	A unique identifier for the application being monitored
<code>memUsageMB</code>	The total amount of memory (in MB) being consumed by the application, updated every 60 seconds.

See the [full list](#).

The default set of attributes give you plenty to work with, but it'd also be in your best interest to add your own custom attributes to the default PageView and Transaction events to help you get more insight about your customers, your app, and your business. For example, by adding User ID, customer location, or customer revenue as custom attributes, you can find out who and where your customers are coming from, and how much they're paying you. See a dip in eCommerce transactions in Central Europe? Then maybe it's worth kicking off a promotion or starting an email campaign to get that region back on track. And that's just one scenario.

## Add a custom attribute

Adding custom attributes is super easy and typically requires no more than one additional line of code to your app per attribute. We've included a quick demo as part of the onboarding process, which will show you an example of the code required to add a custom attribute. Once you're at the **Custom Attributes** screen in the demo, select your agent language from the drop-down menu, and then type in the custom attribute you want to collect. Once you do, a snippet of code will appear below. Add the custom attribute to your code and re-deploy your app. The custom attribute will be collected and available for querying immediately. It's that simple!

If you click on the Data Explorer icon, you'll see a list of the events that are currently being collected in New Relic Insights. Right now, it will show the default PageView and Transaction events, but you can also create your own custom events. Custom events are useful for collecting data that isn't directly available in your application. For example, you may want to collect data that is available in

```
package mypackage;
import java.io.*;

import java.util.Random;
import javax.servlet.http.*;
import javax.servlet.*;
import com.newrelic.api.agent.NewRelic;

public class Ecommerce extends HttpServlet {
    public void doGet (HttpServletRequest req,
                      HttpServletResponse res)
        throws ServletException, IOException
    {
        PrintWriter out = res.getWriter();

        float cartSize = Float.parseFloat(req.getParameter("cartSize"));
        String gender = req.getParameter("gender");
        String cartAbandoned = req.getParameter("cartAbandoned");

        NewRelic.addCustomParameter("cartSize", cartSize);
        NewRelic.addCustomParameter("gender", gender);
        NewRelic.addCustomParameter("cartAbandoned", cartAbandoned);

        out.close();
    }
}
```

Adding a custom attribute is simple. Just copy and paste a snippet of code into your app, and you're all set!



third-party web services or infrastructure components like servers and load balancers. The more data you collect, the more data you'll have in one place. And the more data you have in one place, the greater depth and variety of insights you can gain, so it's highly recommended that you add custom attributes and custom events.

### Add a custom event

To create a custom event and populate it with data you'll first need to create your API keys. Navigate to **Manage Data > API Keys** and click on the **+** icon next to **Insert Keys**. You'll come to an edit screen that'll let you add notes to describe what you're using the key for as reference. Click **Save your notes**.

### Add a query key

While we're here, also note the option on the API Keys screen to create **Query Keys**. Query keys let you query your Insights data via an HTTP request. So, for example, you can query Insights using HTTP requests from within your application and use the data to drive application behavior.

To add a query key, navigate to **Manage Data > API Keys** and click on the **+** icon next to **Query Keys**. In the edit screen, you can add notes to describe what the key is being used for, and click **Save your notes**.



## NRQL queries

Now that you are familiar with the database, you're ready to start querying your data. A NRQL statement is referred to as an event query. Event queries are used to query the events database and return data in a variety of formats. Depending on the data queried, different data visualization widgets will automatically be available to display the data for fast analysis.

To run a NRQL query, go to the command line query tool at the top of the Home page and build out a command in SQL-style syntax.

Not a seasoned SQLer? Or don't know the events and attribute names? Don't worry—the command line query tool has auto completion built in to help you understand what your options are each step of the way. It will automatically list out the different attributes you can query, what functions are available, and flag syntax errors with a red underline as they are typed. (See the [NRQL reference](#) for information on the syntax of NRQL).

Let's give one a try. Go to the Insights Home page and try out one of the NRQL queries we've provided as examples by clicking on the **Try Me** link next to the NRQL statement. Pretty neat, huh? Whatever query you ran will now appear in the **Recent Queries** list at the top. You can see your query history, and also flag any queries you like as favorites, which are listed under the **Favorites** button on the right. To favorite a query, click on the star icon on the far right of the command line. Now you can quickly run the queries that you find most valuable.

### What is NRQL?

The New Relic Query Language, or NRQL (pronounced “nurquel”), is a SQL-flavored language for querying the events database. Using NRQL, you can ask New Relic Insights all sorts of questions about your data, and get answers back in a matter of milliseconds. Because NRQL syntax works much like SQL you can hit the ground running.

NewRelic Administration

NRQL> SELECT ⓘ Run

History 0 Favorites 0

You don't have any queries in your history yet.

Try some sample queries

Unique sessions by application over the last hour

Since 1 hour ago

App Name	Sessions
RPM UI	8.41 K
Storefront	708
Documentation	166
Staging	32
Auth Service staging	26
Forum Production	0

SELECT uniquecount(session) FROM PageView FACET appName SINCE 1 hour AGO ☆ Try Me!

PageView load-time histogram over the last hour

Since 1 hour ago

SELECT histogram(duration) FROM PageView SINCE 1 hour AGO ☆ Try Me!

New Relic Insights offers a variety of sample queries that you can run straight out of the box.




## Dashboards

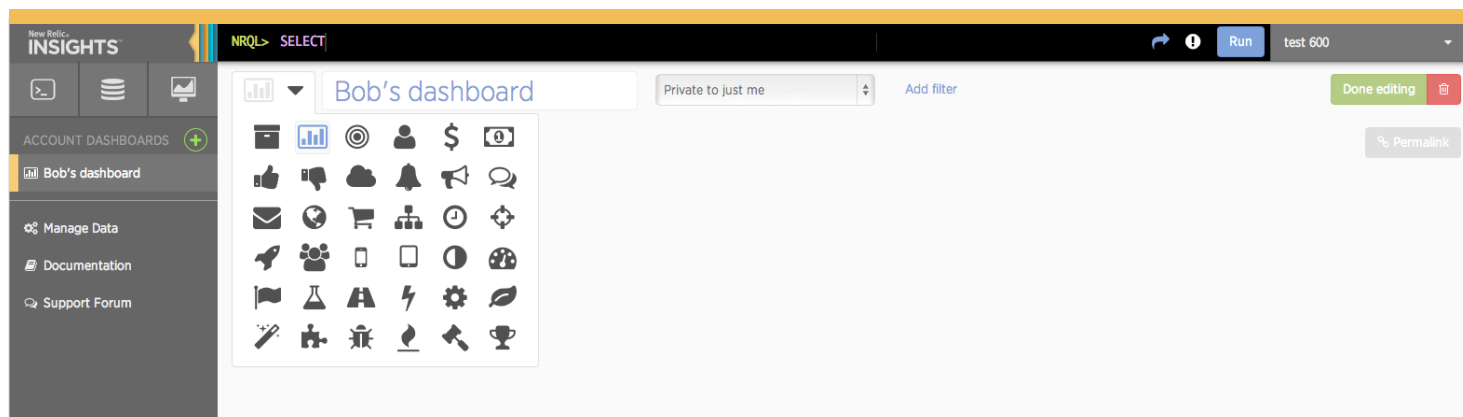
Like New Relic's APM product, New Relic Insights provides a custom dashboards feature that allows you to view query results and widgets as collections of charts and tables. Dashboards are useful for grouping query results based on use cases, job functions, etc. It gives you a quick and easy way to collect and view only the data that matters most to you.

### Create a dashboard

To add a dashboard, you can either:

- Click on the **+** sign next to **Account Dashboards** in the New Relic menu bar
- Or click on the dashboard icon  and click on the **+** sign next to **All Dashboards**

Start by giving your dashboard a title, chose a relevant icon, and fill out other necessary information on the page, then click **Create Dashboard**. Once you've got that dashboard created, you can then start adding the results of specific queries. Type a NRQL query into the command line tool at the top, and once it provides an answer, click on **Add to this dashboard** or add it to another dashboard using the **Add to** drop-down button below.



### Customize a dashboard

Within each chart or table, you have the option to change the viewing format, customize elements of the presentation, or even modify the NRQL statement. To do so, click on the **Edit** button in the top right-hand side of your dashboard. Now, hover over a specific chart, then in the top right-hand corner of the chart click on the pencil icon. Your viewing options will be listed in the tabs on top, with the customization tool on the right.

### Share a dashboard

Dashboards can be kept private or shared with other users in your New Relic Insights account. You have the option to make a dashboard:

- Private to just me (most secure)
- Visible to others in my account
- Editable by others in my account (default)

To change the permissions settings of your dashboard, click on the **Edit** button in the top right-hand corner of your dashboard. Select your sharing preference from the drop-down menu, and click **Done editing**.



## Format your data

New Relic Insights also offers you the option to configure default formats for numeric keys to control how data is displayed on your dashboard. All formats are configured on an account-wide basis. To use the Data Formatter, click on **Manage Data > Formatter**. Choose which event type you'd like to format, and then put in your preferences using the drop-down menu on the right.

## Have a conversation with your data

Now that you're familiar with the mechanics of New Relic Insights, you're ready to start a two-way dialogue with your data. You can leverage your app data to ask questions about your software, customers, and business and get answers that provide real business value. Being data-driven has never been easier.

What insights will you uncover? To learn more about using New Relic Insights, go to our [Documentation site](#).

Check out the New Relic Insights [community forum](#) to engage with other users.