



New Relic Dashboards: Make New Relic Work For You

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Agenda

- Introduction to Insights
- NRQL: Syntax and Event Types
- Exploring the data
 - Lab: Data Explorer
- Starting Queries
 - Lab: Writing Queries
- Chart Builder, New Relic One:
 - Lab: Build Performance and User Charts

----- B R E A K 15 mins -----

- New Relic One Dashboards: New Features
- Interactive Dashboards & Collaborating - Example: Customer Use Cases
- Chart Builder, Advanced Mode:
 - Lab: Building more complex NRQL Queries
- Advanced NRQL and aggregator functions
 - Funnel, Percentile, Histogram
 - Labs: Chart Challenge! / Build My Dashboard!
- New Relic One Overview and wrap up

Speakers



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The Power of Dashboards

Q. "What **experience** do you have with dashboards so far?"

Been working with NRQL thru work throughout 2019

Q. "What are the **benefits** of a dashboard?"

Easy data access

Viewing trends over time

Visual simpler than numbers

Identifying issues

Consumable for non-technical stakeholders

Approachable

Error Breakdown



ERRORMESSAGES (6.43 K)

● Coupon not found with id...	1,118	18.34 %
● Coupon not found with id...	1,114	17.72 %
● Coupon not found with id...	1,113	17.58 %
● Coupon not found with id...	1,111	17.52 %
● Coupon not found with id...	1,110	17.51 %
● Other	285	4.49 %
● Exception of type ArgumentException...	227	3.55 %



Metrics vs Events

Dashboards + Insights

Metrics - Metric data is harvested over 1 minute cycle called ? _____

Events - Metadata about an event that occurred in your application

All event data is sent to Insights

eg.

Event: Transaction

Metadata: Transaction Type - Response Code - Request URI - App ID

NRQL Syntax

SELECT function(attribute) **FROM** Event_Type **WHERE** condition **FACET** grouping

The Main Event Types

Browser

APM

Synthetics

Mobile

Infrastructure

PageView

Transaction

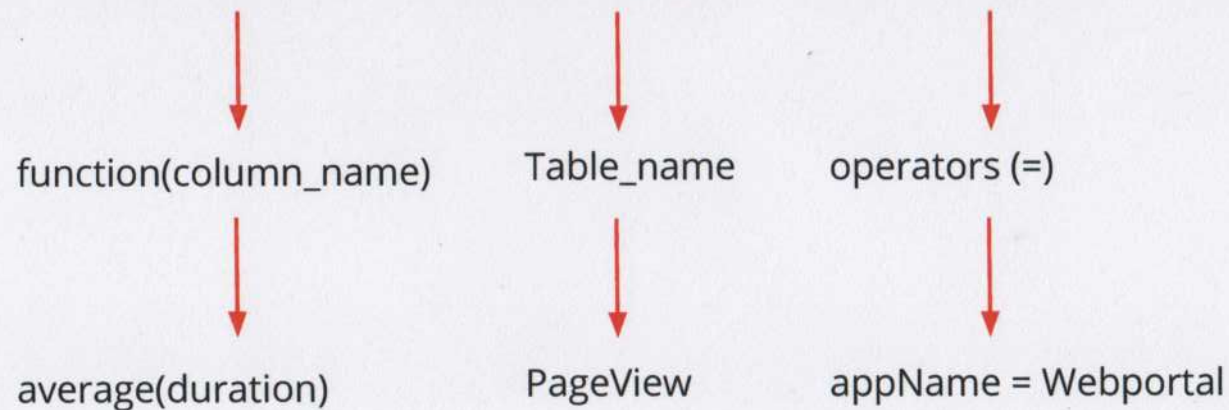
SyntheticCheck

MobileRequest

SystemSample

NRQL Syntax

SELECT function(attribute) **FROM** Event_Type **WHERE** condition **FACET** grouping



PageView - Tables, Rows, Columns

Table: event_type

Columns: attributes

Rows: values

Table: PageView

Columns: duration, countryCode

Rows: 0.3, CA

Latest events

CITY	CONNECTION SETUP DUR...	COUNTRY CODE	DEVICE TYPE	DNS LOOKUP DURATION	DOMAIN	DOM PROCESSING DURAT...
San Jose	0.0	US	Desktop	0.02	webportal.telco.nrdemo...	1.26
	0	DE	Desktop	0	webportal.telco.nrdemo...	0.27
North Bay	0	CA	Desktop	0	webportal.telco.nrdemo...	0.3
London	0	GB	Desktop	0	webportal.telco.nrdemo...	0.11
	0	DE	Desktop	0	webportal.telco.nrdemo...	0.27
North Bay	0	CA	Desktop	0	webportal.telco.nrdemo...	0.3
	0	DE	Desktop	0	webportal.telco.nrdemo...	0.47
North Bay	0	CA	Desktop	0	webportal.telco.nrdemo...	0.44

Data Explorer

see all samples

Data Explorer

Events

Metrics

PageView

Filter

Group by

Search attributes

View

Name

Page Url

Domain

Browser Transaction Name

Geography

City

Country Code

Region Code

Autonomous System Number

Organization

Browser

User-Agent Name

User-Agent Version

User-Agent Operating System

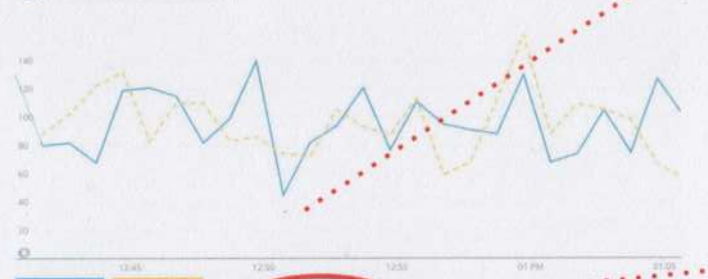
Device Type

Application

App Name

Identity Attributes

Plot Number of PageView events



Sample PageView events

Timestamp	04 Sep 13:10:43	App ID	43,192,210	App Name	WebPortal
App	43,192,210	App Version	1.2.2	App Language	en-US
App Organization	43,192,210	App Country	US	App Region	San Jose
Carrier Name	1.2	Carrier Code	US	Carrier Country	San Jose
Carrier Code	US	Carrier Country	US	Carrier Region	San Jose
Domain	webportal.telco.nr...	Domain Code	1.22	Domain Country	San Jose
First Connected Pa...	1.22	First Connected Pa...	1.22	First Connected Pa...	1.22
Name	WebTransactionJS...	Name	1.18	Name	1.18
Page Rendering O...	0.34	Page Rendering O...	0.34	Page Rendering O...	0.34

Table: pageView (event_type)

Timestamp	App ID	App Name	App Version	App Language	App Country	App Region	App Organization	Carrier Name	Carrier Code	Carrier Country	Carrier Region	Domain	Domain Code	Domain Country	Domain Region	First Connected Pa...	Name	Page Rendering O...
04 Sep 13:10:43	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:44	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:45	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:46	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:47	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:48	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:49	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:50	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:51	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:52	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:53	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:54	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:55	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:56	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:57	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:58	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:10:59	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34
04 Sep 13:11:00	43,192,210	WebPortal	1.2.2	en-US	US	San Jose	43,192,210	1.2	US	US	San Jose	webportal.telco.nr...	1.22	US	San Jose	1.22	WebTransactionJS...	0.34

Lab: Data Explorer

► Experiment with the Data Explorer and use to build some queries and add them to a dashboard:

1. Build a **PageView** query using the data explorer:
 - a. use **PageView** event type, group by **PageUrl**, or **Countrycode**,
 - b. try different **time frames** in the top right,
 - c. try **Plotting Sessions** instead of page views
2. Build a back-end query using the data explorer
 - a. use **Transaction** event type, group by **Name**, or **Host**,
3. Build a host query using the data explorer
 - a. Use **SystemSample** event type
 - b. try plotting '**Load Average 5 minute**' or **CPU Percent**, group by '**Hostname**' or '**EC2 Instance type**'
4. Create a **new dashboard** and **Copy and Paste a query** into your new dashboard to add a chart

Lab: Starting Queries

► Start with these simple **PageView** query examples:

1. SELECT Count(*) FROM Page View

Count all the PageView events on your site

2. SELECT Count(*) FROM Page View FACET Country Code

See all Pageviews **grouped** by country

3. SELECT Count(*) FROM Page View WHERE Country Code = 'us' FACET City

See all Pageviews from a **specific** country **grouped** by cities

Chart Builder

Which cities are experiencing the worst page load time for a specific app (my WebPortal app)?

Chart builder - Add widget

Account Demotron V2

View a chart with duration.

Facet by

Supports:

- Browser: Browser vs. Synthetic performance
- Browser: SPA load times histogram
- Mobile: Response time histogram
- API: Transaction time breakdown

EVENT TYPES / ATTRIBUTES / METRIC NAME

- AwcLambdainvocation duration
- BrowserInteraction duration
- PageView duration
- Load duration
- SyntheticCheck duration
- SyntheticRequest duration

Retrieve results by

Compare

PageView

PageView events occur when a user navigates to (loads) a new page. It tracks geographic and timing data for each browser page load.

Duration

The browser response time in seconds. Derived from the Navigation Timing API as loadEventEnd minus navigationStart. Inclusive of other duration measurements.

See attribute in docs

Lab: Chart Builder

- Use the Chart Builder to answer these questions and add the charts to your team's dashboard.

We want to answer the following PageView **performance** questions:

1. What's the worst (**max**) page load **duration** in my app called '**WebPortal**' (appname) in the past 24 hours
2. How does my **average** page load **duration** over past 7 days **compare with** the previous week
3. Which **cities** (facet) are experiencing the worst page loads in my app called 'WebPortal' over the past 24 hours

21.4
24.202
with 5 min

Partly got better

Dallas, Portland

We also want to know more about **our traffic and users** (hint: use 'Facet' options):

1. Where our users are coming from? *IE, US, AR, DE, CA, KR, JP*
2. What browser are they using? *Chrome, Safari, IE*
3. What device type are they are on? *Desktop, mobile, Tablet*



Brush zoom

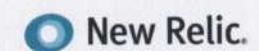


Chart Builder Advanced (NRQL)

Lets write some NRQL!

What is the worst page load duration
for my Web Portal app, broken out by

- Browser,
- City,
- & Country code ?

Chart Builder Advanced

Multi-Count and Multi-Facet

```
SELECT function(attribute), function(attribute) FROM eventType FACET PageUrl,  
UserAgentName
```

Labelling

```
SELECT function(attribute) AS 'my label' FROM ...
```

Since, Until, Compare With, TimeSeries

```
SELECT average(duration), max(duration) FROM PageView SINCE 1 week AGO TIMESERIES AUTO
```

Grouped by time range: FACET by time span

```
FACET weekDayof(timestamp)
```

Aggregators: Percentiles

```
SELECT percentile(duration, 5, 50, 95) FROM PageView TIMESERIES AUTO
```

More examples in our docs site 'docs.newrelic.com' and search '[App data query examples using NRQL](#)':

<https://docs.newrelic.com/docs/query-data/nrql-new-relic-query-language/getting-started/nrql-syntax-components-functions#functions>

Lab: Advanced NRQL Queries

- ▶ 1. Build 3 queries using the following ideas:
 - a. Build **Multi-Count** and **Multi-Facet** Queries (try a Table, Bar, or Pie chart)
 - b. add **labels** to values being queried to decorate your charts (As 'label-name')
 - c. Add **WHERE** conditions to refine your data sets to an Application or other condition

Example suggestions:

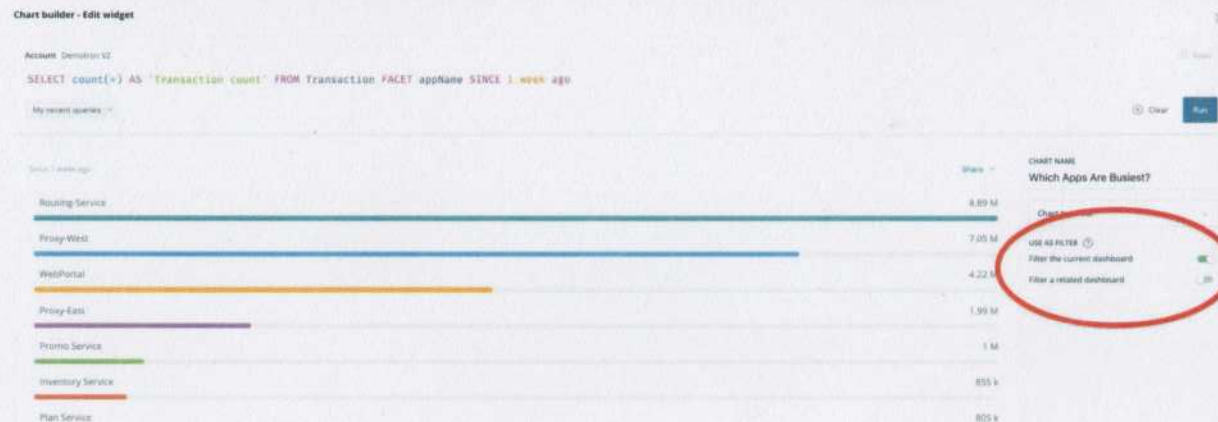
- What is the worst page load duration for my Web Portal app, broken out by Browser, City, Country code, PageUrl
- Count only 500 errors and group by transaction name and transaction sub-type
- Multi-count number of your transactions, their max duration, and group by transaction name and transaction sub-type
- Pie chart the split of different browsers used or device types
- Show me load distribution or CPU usage of throughput across my hosts (Transaction)

Interactive Dashboards & Collaboration

Linking FACETS to filter FACETS through a Dashboard

Link 'general' to 'specific' Dashboards

Ways to share charts with teams or others



Funnel

SELECT funnel(attribute, Step A, Step B)

Example:

```
SELECT funnel(session, WHERE pageUrl LIKE '%/' AS 'Homepage',  
                        WHERE pageUrl LIKE '%/browse/plans' AS 'Click Product',  
                        WHERE pageUrl LIKE '%login.jsp' AS 'Login',  
                        WHERE pageUrl LIKE '%/checkout' AS 'Confirm')
```

Diagram illustrating the funnel steps and labels:

- Step A: WHERE pageUrl LIKE '%/' AS 'Homepage'
- Step B: WHERE pageUrl LIKE '%/browse/plans' AS 'Click Product'
- Label: WHERE pageUrl LIKE '%login.jsp' AS 'Login'
- Label: WHERE pageUrl LIKE '%/checkout' AS 'Confirm'



Histogram

```
SELECT histogram(attribute, ceiling [, number of buckets])  
FROM Event_Type SINCE timeframe
```



Example:

“Show me a Histogram of **response times** ranging **up to 10 seconds** over **20 buckets**”

```
SELECT histogram(duration, 10, 20) FROM PageView SINCE 1 week ago
```

Lab: Histogram

- ▶ 1. Fill in the blanks _____ and write the following query in a New Relic account
 - "Show me a Histogram of back-end response times ranging up to 2 seconds with 10 buckets":

SELECT histogram(_____, _____, _____) FROM _____ SINCE 1 week ago

2. Refine the settings of your histogram:
 - Adjust the ceiling to a smaller value and increase the number of buckets to get smaller steps
 - When you're happy with the distribution save your new Histogram chart

Lab: Chart Challenge!

► Try adding as many of these charts and edit your dashboard layout for best effect!

- How many live visitors are on my site right now?
 - `uniqueCount(session) AS 'Site Visitors'`
- Throughput grouped by Transaction
 - FACET name
- What response codes are we seeing?
 - FACET `HttpStatusCode`
- Average response time grouped by Transaction
 - FACET name
- Show some percentile breakdowns of Transaction response times
 - `percentile(duration, 5, 50, 95)`
- Show a distribution (histogram) of Transaction response times
 - `histogram(duration, 0.5, 30)`
- Use the multi-count function to show how the front end and back end performance compare right now (past 10 mins) ?
 - `average (duration),`
`average (backendDuration)`
- You have added a custom attribute to your Transaction event type in the WebPortal app to store the total value of your shopping cart:
`PurchasedCartGrandTotal`
 - Show the total shopping cart value since the past 60 min
`sum (PurchasedCartGrandTotal)`

Lab: Build My Dashboard !

- ▶ Build a custom dashboard in your own New Relic account using the Chart Builder.
Choose a focus like Front End, Back End, Hosts, E-commerce, or a combination.

Look up in Docs: “App data query examples using NRQL”

Use the following Dashboards for ideas:

- Questions across account
- Browser Overview
- Real time Dashboard
- Overall Application Health
- Tell me about my Application Servers
- Diagnostic Overview

Use the following Charts/ Questions for ideas:

- What cities are our users in? - PageView
- What countries are our users in? - PageView
- Which apps are being used most? - Transaction
- Average app server response time of all apps timeseries? - Transaction
- Average duration page load - PageView

- Reduce the amount of data collected
- Use the agent's built-in data compression
- Collect only the data you need
- Use the agent's built-in data compression
- Collect only the data you need
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- Collect only the data you need
- Use the agent's built-in data compression

Use the agent's built-in data compression to reduce the amount of data collected

Use the agent's built-in data compression to reduce the amount of data collected

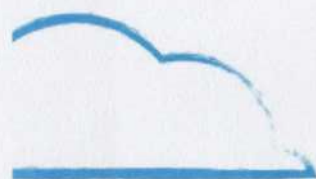
Use the agent's built-in data compression to reduce the amount of data collected

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+

New Relic®
ONE™





- Taming Organizational Complexity
- Entity Centric
- Features include;
 - Global Search
 - Entity Explorer
 - Maps
 - Sharing and Access
 - Favorites
 - Tagging and Labels



Online Courses, Certifications & more...

<https://learn.newrelic.com/>

find out more at

email: learn@newrelic.com



Thank You

find out more at
email: learn@newrelic.com