Monitor website performance in a dashboard

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When website performance slows down, knowing whether the issue is occurring at the application or network-level can save you troubleshooting time. In the ExtraHop system, a dashboard is an effective tool for monitoring real-time data, and for identifying and troubleshooting issues.

In this walkthrough, you will build a dashboard to help answer the following questions about website performance in your network environment:

- How many requests are clients sending to my web servers?
- Are my web servers working properly?
- Is network availability affecting web applications?
- Is my network unusually slow?

Prerequisites

- Familiarize yourself with the concepts in this walkthrough by reading the Dashboards ⧉ topic.
- You must have access to an ExtraHop system with a user account that has limited or full write privileges ⧉.
- Your ExtraHop system must also have network data with web server traffic. If you do not have access to web server data, you can perform this walkthrough in the ExtraHop demo ⧉.

Create a dashboard

When you create a new dashboard, the workspace opens in an editable layout mode with a single region and two empty widgets: a chart and a text box.

1. Log in to the ExtraHop system through `https://<extrahop-hostname-or-IP-address>`.
2. At the top of the page, click **Dashboards**.
3. Click the command menu ⋮ in the upper right corner and select **New Dashboard** to create an empty dashboard.
4. Type a name for your dashboard in the **Title** field. For this walkthrough, type `Website performance`.
5. Click **Create**.

Configure your first chart

Your new dashboard contains an empty chart, which you will configure to display the total number of HTTP requests that were sent to your web servers. This step will help you understand how web transactions might affect website performance.

You will add more charts later, but these initial steps will show you how to add data to a chart by first selecting a metric source and then adding a metric in the Metric Explorer.

1. Click the empty chart widget in your newly created dashboard to launch the Metric Explorer.
2. Click **Add Source** and type `All Activity`. All Activity application is a metric source that is available by default to all users and contains metrics about all of the devices discovered on your network.
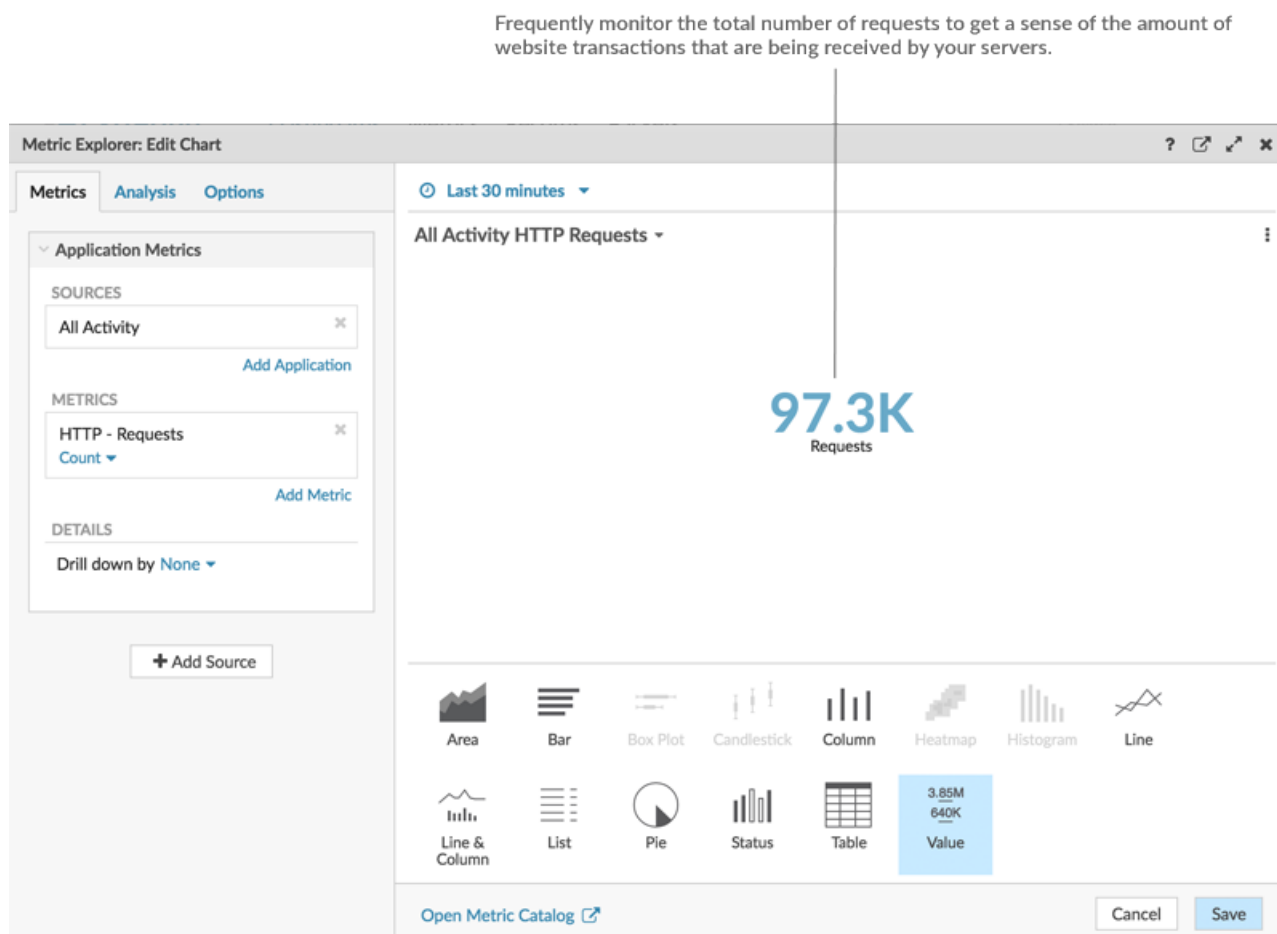
   > 💡 **Tip:** If there is a specific web server that you want to monitor, type the name of the server into the search field instead of All Activity, and select that server as your source.

3. Select **All Activity** from the list. After you make your selection, a field appears for you to select a metric that is associated with this source.

4. Begin typing `HTTP requests` to filter this metric from all of the available metrics, and then select **HTTP Requests**.
5. Select the **Value** chart type from the bottom of the Metric Explorer. The preview pane immediately displays the number of HTTP requests sent to web servers on your network that have occurred during the time interval you select from the global time selector.
6. Click **Save** to return to your dashboard.

The following figure displays the chart configuration settings.

Frequently monitor the total number of requests to get a sense of the amount of website transactions that are being received by your servers.

Metric Explorer: Edit Chart | ? ☑ ↗ ✕

Metrics   Analysis   Options

⊙ Last 30 minutes ▾

All Activity HTTP Requests ▾

⌄ Application Metrics

SOURCES

All Activity   ✕

Add Application

METRICS

HTTP - Requests   ✕
Count ▾

Add Metric

DETAILS

Drill down by None ▾

97.3K
Requests

＋ Add Source

Area   Bar   Box Plot   Candlestick   Column   Heatmap   Histogram   Line

Line & Column   List   Pie   Status   Table   Value

3.85M
640K

Open Metric Catalog ☑

Cancel   Save

Because dashboards are often shared with members of a network team, you can add explanatory text boxes next to your charts. For this walkthrough, however, we will not be adding text, and you can delete the text box by completing the following steps:

1. Click the command menu ⋮ in the upper right corner of the text box widget and select **Delete**.
2. Click **Delete Widget**.

Customize the dashboard layout

One of the powers of dashboards lies in compiling multiple charts into a single page, giving you many views of your network traffic. In this section, you'll learn how to customize the layout of your dashboard by adding and arranging more charts.

When the dashboard is in layout mode, all dashboard components (regions and widgets) are available for you to drag and drop from the bottom of the dashboard page.

1. Drag the corner of the dashboard workspace to make room for additional charts.
2. Drag a chart widget from the bottom of the dashboard to the empty area of the top region where the text box previously was.

> **Note:** If there is overlap, dashboard components outline in red, and you must click and drag the sides of the widgets and regions to make room.

3. Drag a new region to the dashboard.
4. Drag two more chart widgets into the new region.
5. In each region header, click **Rename** to type a unique name for each region. For this walkthrough, rename the top region to `Web` and the bottom region to `Network`.

Add more HTTP metrics to your dashboard

Repeat the instructions provided earlier to configure the new empty charts. Continue to set your source to All Activity. This source ensures that all of the metrics you are observing are related to the same set of web servers.

The tables below outline the selections you should make for the metrics and chart types in each chart.

Charts in the Web region

Chart 1: Determine how many requests your web servers are receiving. The value chart you already built lets you glance at the total number of client HTTP requests sent to your web servers.

Chart 2: Determine if web servers working properly. The line & column chart shows you the relationship of 500-level status codes (server unavailability errors) to web transactions over time.

An increase in errors that correlates with a drop in transactions might indicate that a server issue is affecting website performance.
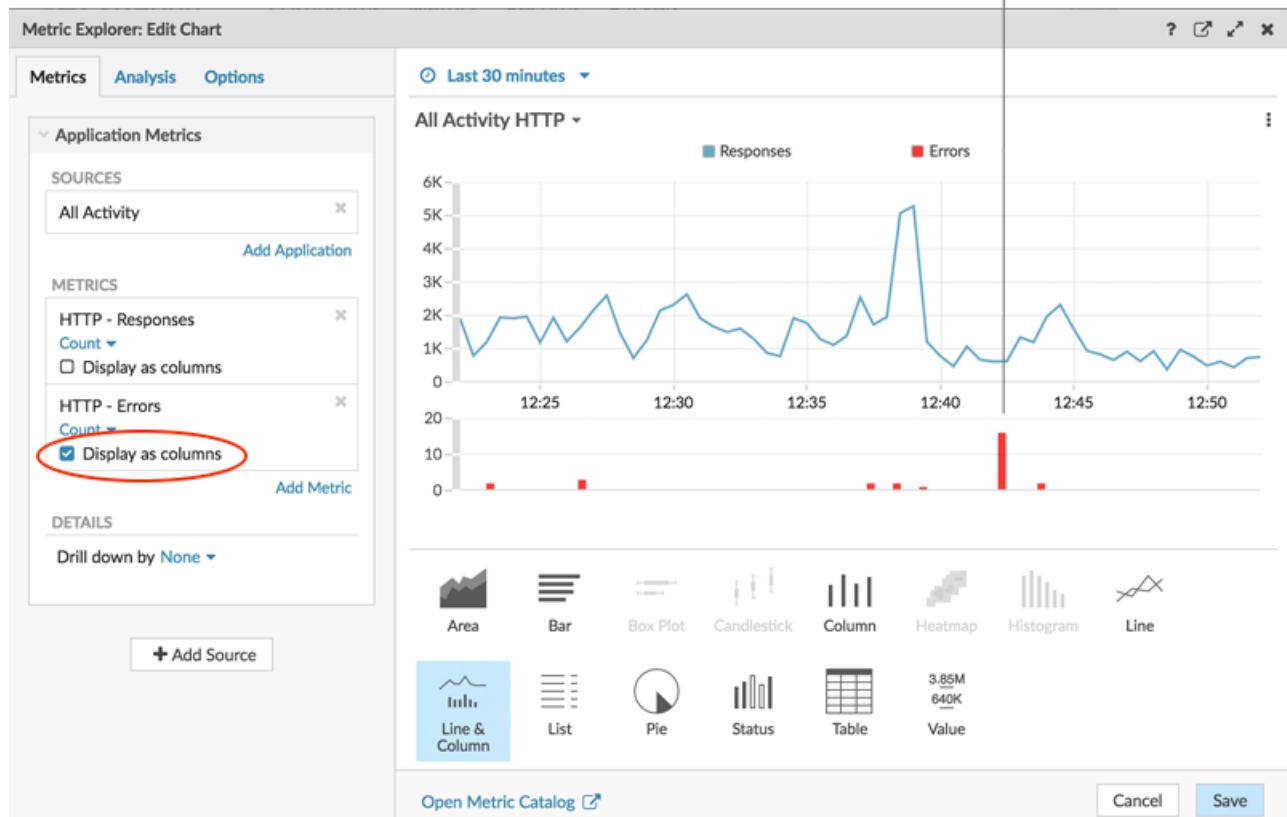
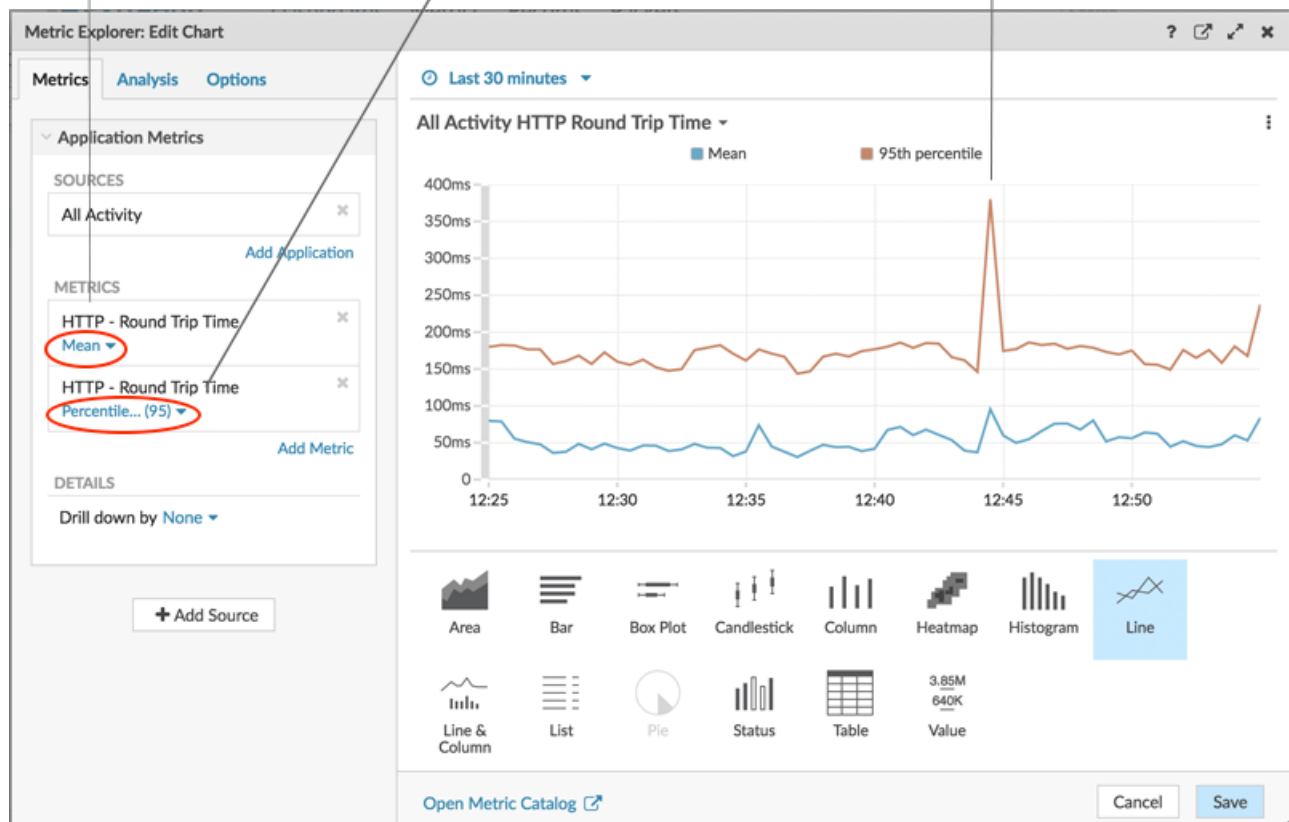| What to Configure	What to Select
Source	All Activity
Metrics	1. HTTP Responses 2. HTTP Errors
Chart type	1. Line & column 2. Select **Display as columns** on the HTTP Errors metric.

Charts in the Network region

Chart 1: Determine if network availability is affecting web applications. A line chart will display how long it takes for data to cross the network (HTTP Round Trip Time). You will want to see the mean (50th percentile) and 95th percentile values for this metric, which requires adding the metric twice, as displayed in the following figure:

The mean line gives a sense of how long it typically takes for packets, or data, to transfer between clients and servers across the network over time.

The 95th percentile line displays the longest data transfer times.

Spikes and trends that are correlated to a drop in web transactions might indicate that a network issue is affecting website performance.

What to Configure	What to Select
Source	All Activity
Metrics	1. Add HTTP Round Trip Time twice 2. Add a 95th percentile line:

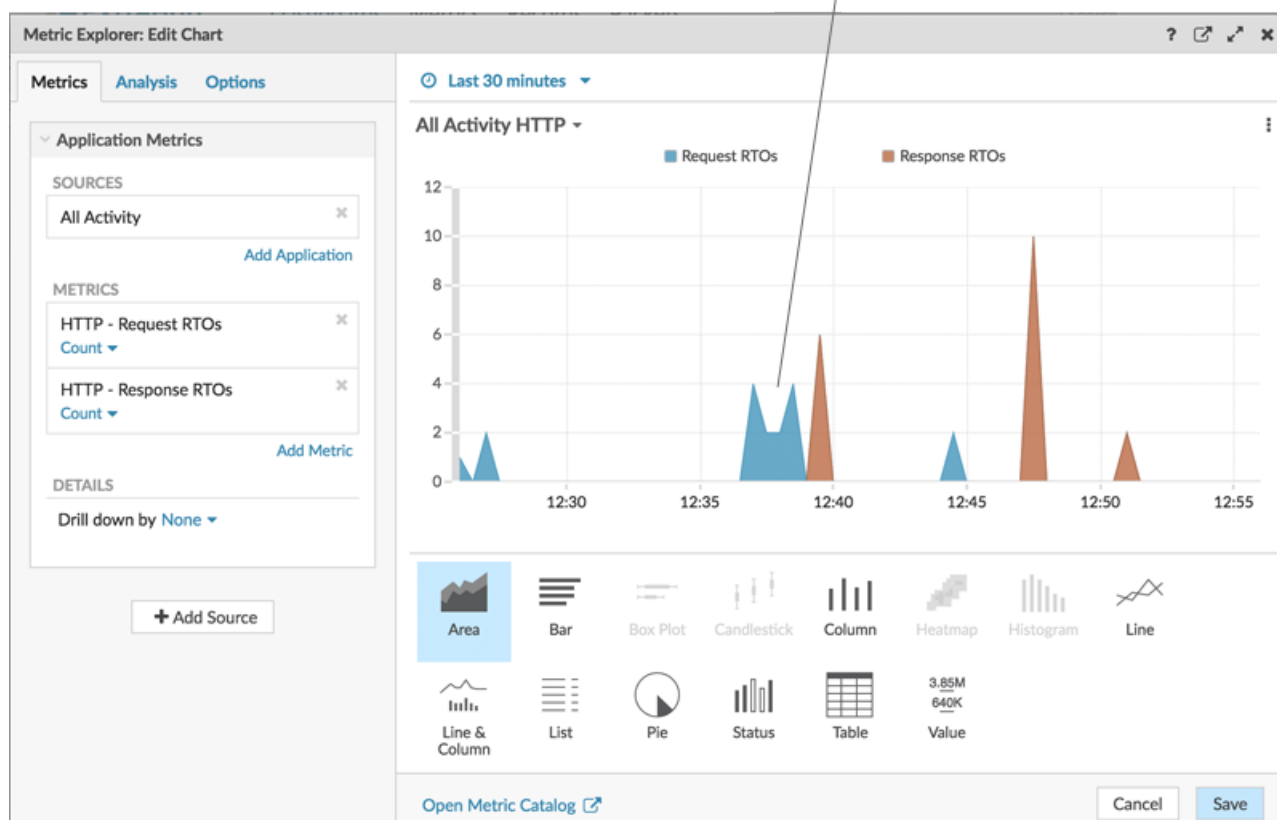| What to Configure	What to Select
	a. Click **Mean** underneath one of the metric names. b. Select **Percentile** from the drop-down list. c. Type 95 and click **Save**.
Chart type	Line

Chart 2: Determine if the network is unusually slow. The retransmission timeout (RTO) metric helps to identify packet loss and to locate the congested links. Because the combination of HTTP request and response RTOs can contribute to a slow website, correlate network retransmission timeouts to website performance in an area chart, as displayed in the following figure:

A large volume of area in the chart that correlates to a drop in web transactions might indicate that a network issue is affecting website performance.

| What to Configure	What to Select
Source	All Activity
Metrics	1. HTTP Request RTOs 2. HTTP Response RTOs
Chart type	Area

Monitor your website performance

After you have completed configuring all of the charts, click **Exit Layout Mode**. Your dashboard should look similar to the following figure. However, data in your dashboard charts will look different because your dashboard is reflecting the activity occurring on your network.
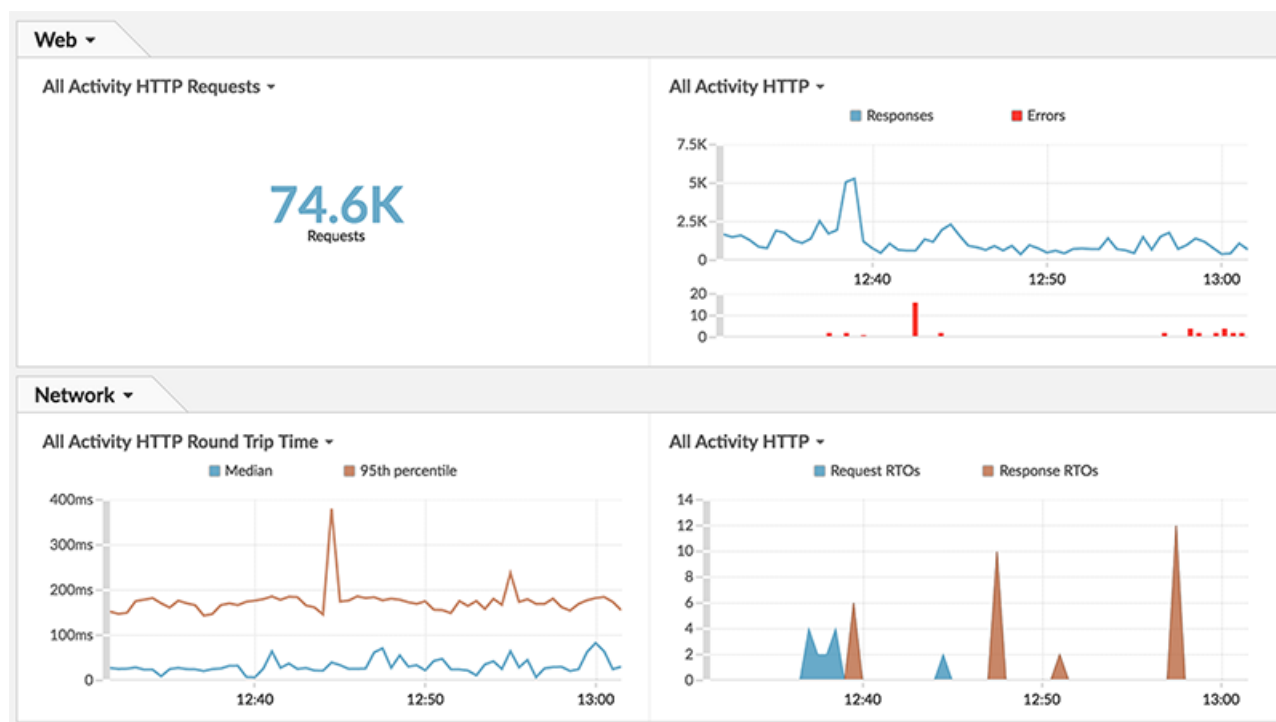
Now you can monitor and assess your website performance on a regular basis.

Share your dashboard

Share this dashboard with other teams to help you keep an eye on website performance and identify issues that are potentially occurring in an application or on the network.

1. In the upper right corner of the dashboard, in the navigation bar, click the command menu ⋮.
2. Click **Share**.
3. Select **Allow all users to view this dashboard** to provide all ExtraHop users at your organization with dashboard viewing privileges.

    > **Note:** You can restrict dashboard access to specific users. For more information, see the Share a dashboard ⤤.

4. Click **Save**.