

```
+++ title = "What's new in Grafana v5.1" description = "Feature and improvement highlights for Grafana v5.1"
keywords = ["grafana", "new", "documentation", "5.1", "release notes"] aliases = ["/docs/grafana/latest/guides/whats-
new-in-v5-1/"] weight = -15 [build] list = false +++
```

What's new in Grafana v5.1

Grafana v5.1 brings new features, many enhancements and bug fixes. This article will detail the major new features and enhancements.

- [Improved scrolling experience]({{< relref "#improved-scrolling-experience" >}})
- [Improved docker image]({{< relref "#improved-docker-image-breaking-change" >}}) with a breaking change!
- [Heatmap support for Prometheus]({{< relref "#prometheus" >}})
- [Microsoft SQL Server]({{< relref "#microsoft-sql-server" >}}) as metric and table data source!
- [Dashboards and Panels]({{< relref "#dashboards-panels" >}}) Improved adding panels to dashboards and enhancements to Graph and Table panels.
- [New variable interpolation syntax]({{< relref "#new-variable-interpolation-syntax" >}})
- [Improved workflow for provisioned dashboards]({{< relref "#improved-workflow-for-provisioned-dashboards" >}})

Improved scrolling experience

In Grafana v5.0 we introduced a new scrollbar component. Unfortunately this introduced a lot of issues and in some scenarios removed the native scrolling functionality. Grafana v5.1 ships with a native scrollbar for all pages together with a scrollbar component for the dashboard grid and panels that's not overriding the native scrolling functionality. We hope that these changes and improvements should make the Grafana user experience much better!

Improved Docker image (breaking change)

Grafana v5.1 brings an improved official docker image which should make it easier to run and use the Grafana docker image and at the same time give more control to the user how to use/run it.

We've switched the id of the grafana user running Grafana inside a docker container. Unfortunately this means that files created prior to 5.1 won't have the correct permissions for later versions and thereby this introduces a breaking change. We made this change so that it would be easier for you to control what user Grafana is executed as (see examples below).

Version	User	User ID
< 5.1	grafana	104
>= 5.1	grafana	472

Please read the [updated documentation](#) which includes migration instructions and more information.

Prometheus

{{< figure src="/static/img/docs/v51/prometheus_heatmap.png" max-width="800px" class="docs-image--right" >}}

The Prometheus data source now support transforming Prometheus histograms to the heatmap panel. Prometheus histogram is a powerful feature, and we're really happy to finally allow our users to render those as heatmaps. Please read [Heatmap panel documentation](#) for more information on how to use it.

Prometheus query editor also got support for autocomplete of template variables. More information in the [Prometheus data source documentation]({{< relref "../datasources/prometheus/" >}}).

Microsoft SQL Server

{{< figure src="/static/img/docs/v51/mssql_query_editor_showcase.png" max-width= "800px" class="docs-image--right" >}}

Grafana v5.1 now ships with a built-in Microsoft SQL Server (MSSQL) data source plugin that allows you to query and visualize data from any Microsoft SQL Server 2005 or newer, including Microsoft Azure SQL Database. Do you have metric or log data in MSSQL? You can now visualize that data and define alert rules on it like with any of Grafana's other core data sources.

Please read [Using Microsoft SQL Server in Grafana documentation]({{< relref "../datasources/mssql/" >}}) for more detailed information on how to get started and use it.

Dashboards and Panels

Adding new panels to dashboards

{{< figure src="/static/img/docs/v51/dashboard_add_panel.png" max-width= "800px" class="docs-image--right" >}}

The control for adding new panels to dashboards have got some enhancements and now includes functionality to search for the type of panel you want to add. Further, the control has tabs separating functionality for adding new panels and pasting copied panels.

By copying a panel in a dashboard it will be displayed in the `Paste` tab in *any* dashboard and allows you to paste the copied panel into the current dashboard.

{{< figure src="/static/img/docs/v51/dashboard_panel_copy.png" max-width= "300px" >}}

Graph Panel

New enhancements include support for multiple series stacking in histogram mode, thresholds for right Y axis, aligning left and right Y-axes to one level and additional units. More information in the [Graph panel documentation]({{< relref "../visualizations/graph-panel.md" >}}).

Table Panel

New enhancements include support for mapping a numeric value/range to text and additional units. More information in the [Table panel documentation](#).

New variable interpolation syntax

We now support a new option for rendering variables that gives the user full control of how the value(s) should be rendered. In the table below you can see some examples and you can find all different options in the [Variables documentation](#).

Filter Option	Example	Raw	Interpolated	Description
glob	<code>\${servers:glob}</code>	<code>'test1', 'test2'</code>	<code>{test1,test2}</code>	Formats multi-value variable into a glob

regex	<code>\${servers:regex}</code>	'test.', 'test2'	(test. test2)	Formats multi-value variable into a regex string
pipe	<code>\${servers:pipe}</code>	'test.', 'test2'	test. test2	Formats multi-value variable into a pipe-separated string
csv	<code>\${servers:csv}</code>	'test1', 'test2'	test1,test2	Formats multi-value variable as a comma-separated string

Improved workflow for provisioned dashboards

{{< figure src="/static/img/docs/v51/provisioning_cannot_save_dashboard.png" max-width="800px" class="docs-image--right" >}}

Grafana v5.1 brings an improved workflow for provisioned dashboards:

- A populated `id` property in JSON is now automatically removed when provisioning dashboards.
- When making changes to a provisioned dashboard you can `Save` the dashboard which now will bring up a *Cannot save provisioned dashboard* dialog like seen in the screenshot to the right.

Available options in the dialog will let you `Copy JSON to Clipboard` and/or `Save JSON to file` which can help you synchronize your dashboard changes back to the provisioning source. More information in the [Provisioning documentation](#).

Changelog

Check out the [CHANGELOG.md](#) file for a complete list of new features, changes, and bug fixes.