



Creating interactive Zabbix dashboards for large organizations and MSPs

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Course Content Creator



Widget data broadcasting and listening

Broadcast and listen capabilities

Widgets have broadcast and listen capabilities for the following entities:

- ▶ Hosts
- ▶ Host groups
- ▶ Time periods
- ▶ Items
- ▶ Events
- ▶ Maps

Widget	Broadcasts	Listens
Action log	-	Time period
Clock	-	-
Discovery status	-	-
Favorite graphs	-	-
Favorite maps	-	-
Gauge	-	Hosts, Items
Geomap	Hosts	Host groups, Hosts
Graph	Time period	Time period, Items, Hosts
Graph (classic)	Time period	Hosts, Items, Graphs, Time period
Graph prototype	Time period	Hosts, Time period
Honeycomb	Hosts, Items	Host groups, Hosts
Host availability	-	Host groups
Host card	-	Hosts
Host navigator	Hosts	Host groups
Item history	Items	Hosts, Time period
Item navigator	Items	Host groups, Hosts
Item value	-	Hosts, Items, Time period
Map	Host groups, Hosts	Maps
Map navigation tree	Maps	-
Pie chart	-	Time period, Items
Problem hosts	Host groups	Host groups, Hosts
Problems	Events	Host groups, Hosts
Problems by severity	Host groups	Host groups, Hosts
SLA report	-	-
System information	-	-
Top hosts	Hosts	Host groups, Hosts
Top items	-	Host groups, Hosts
Top triggers	-	Time period
Trigger overview	-	Host groups, Hosts
URL	-	Hosts
Web monitoring	Host groups	Host groups, Hosts

Broadcast and listen capabilities

Additional information about widgets and their broadcast/listen capabilities can be found in our documentation



1 Dashboard widgets

Table of Contents

Overview

This section provides the details of parameters that are common for [dashboard](#) widgets.

Common parameters

The following parameters are common for every single widget:

Name	
Refresh interval	<p>Enter a widget name.</p> <p>Configure the default refresh interval.</p> <p>Default refresh intervals for widgets range from <i>No refresh</i> to <i>15 minutes</i> depending on the type of the widget. For example:</p> <ul style="list-style-type: none">- <i>No refresh</i> for <i>URL</i> widget;- <i>1 minute</i> for <i>Action log</i> widget;- <i>15 minutes</i> for <i>Clock</i> widget. <p>Refresh intervals can be set to a default value for all users. Switch the dashboard to editing mode, click the edit a widget button and select the desired refresh interval from the dropdown list.</p>

1 Dashboard widgets

Overview

Common parameters

Specific parameters

Dynamic parameters

Host groups, Hosts, Item, Item list

Override host

Time period

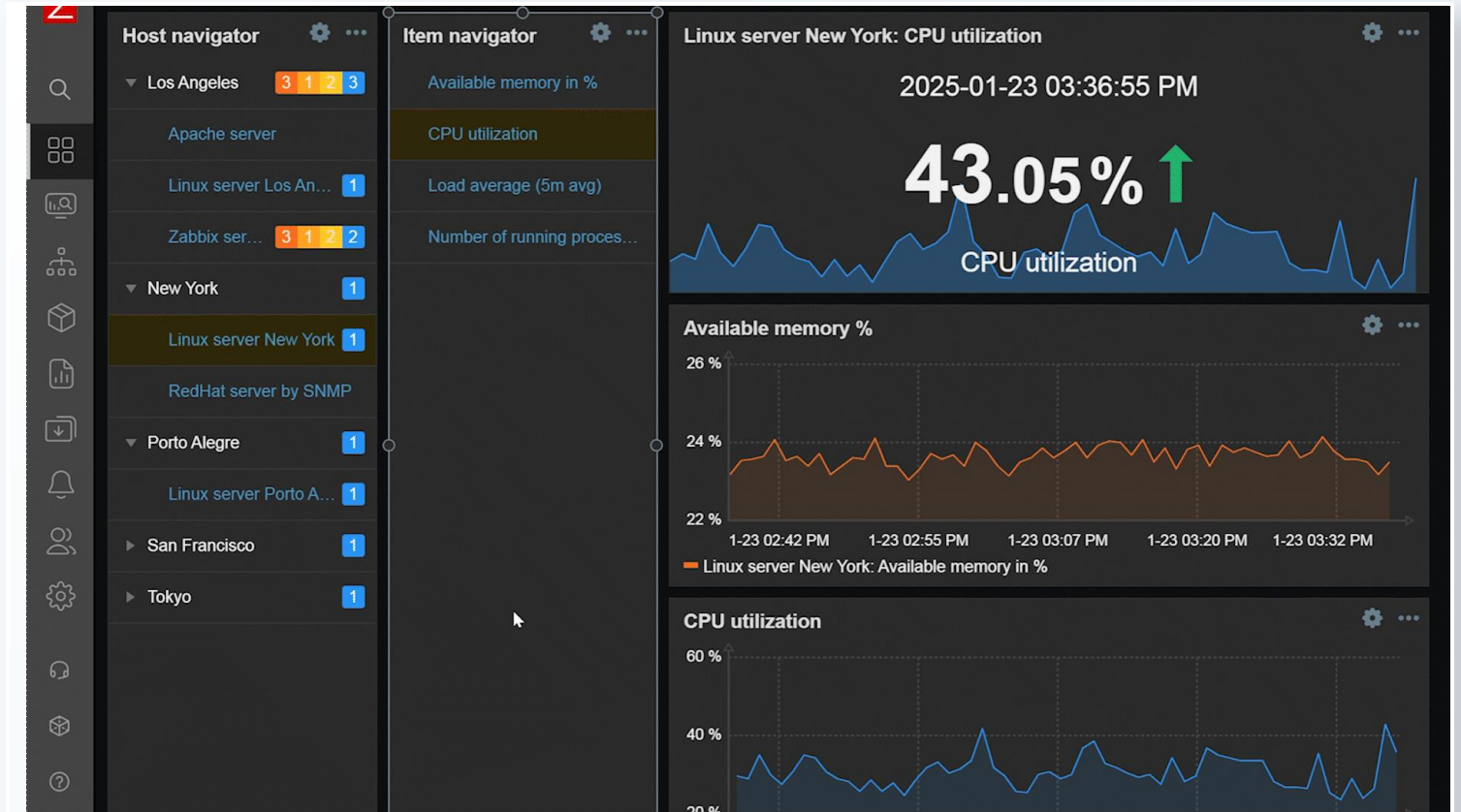
Widget behavior

Widget compatibility

Broadcast and listen capabilities

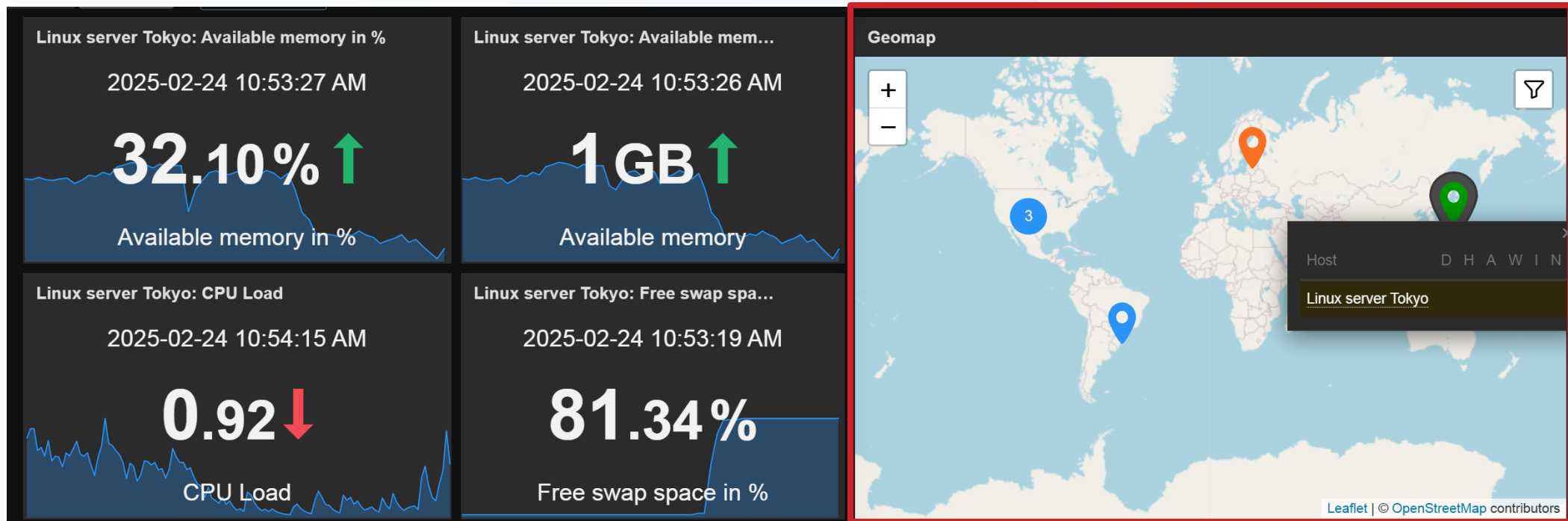
Broadcast and listen capabilities ensure that some widgets can be used as data sources for other widgets

- ▶ Hosts are selected in the Host navigator
- ▶ Items are selected in the item navigator
- ▶ Host selection is reflected in graph and item value widgets



Broadcast and listen capabilities

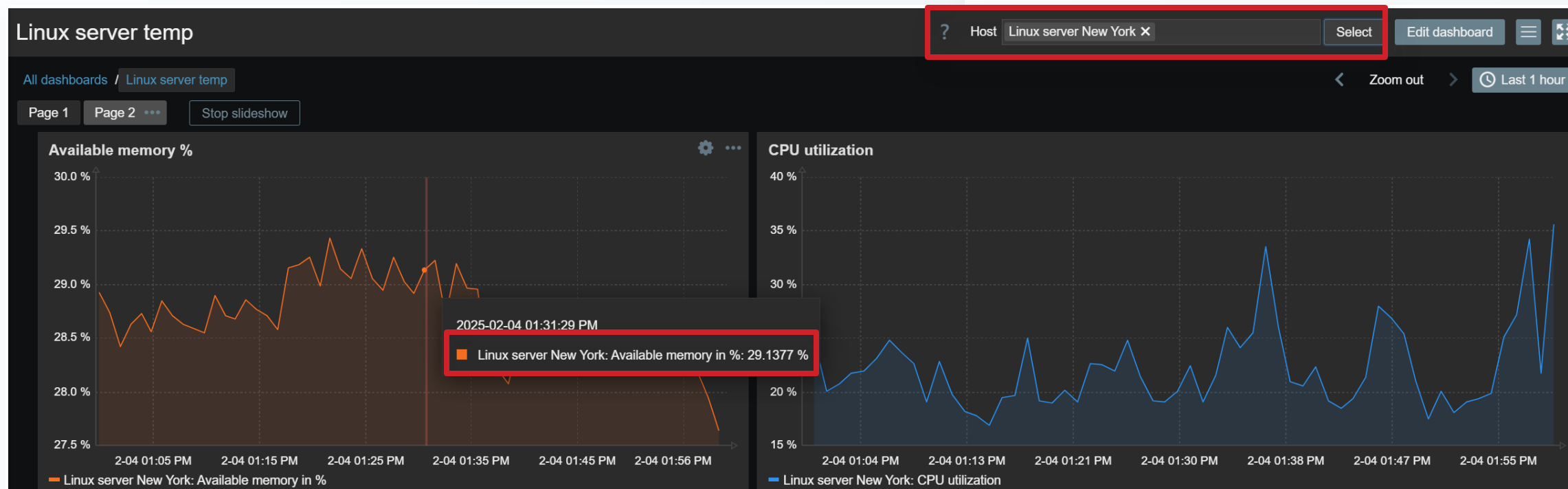
Various Non-navigator widgets can also be used as broadcast widgets



Broadcast and listen capabilities

Host data source can be overridden on the dashboard level

- ▶ Host is selected in the dashboard dropdown
- ▶ The item values are displayed for the selected host (If such items exist on the host)



Navigator widgets

The navigator widgets can be used as data sources for other widgets:

- ▶ Host navigator
- ▶ Item navigator
- ▶ Map navigation tree

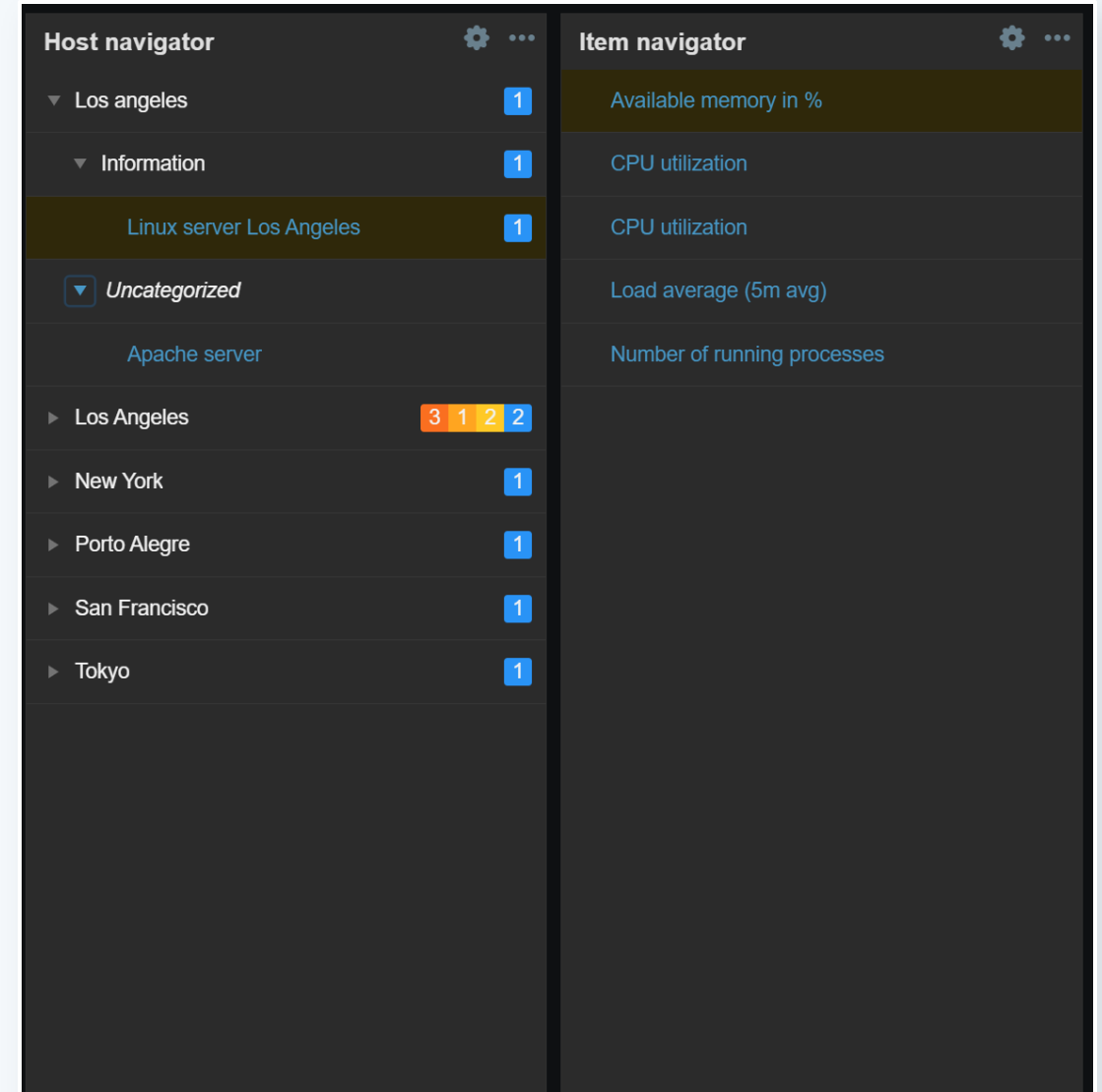
Various widgets can utilize navigators as data sources:

- ▶ Graphs
- ▶ Maps
- ▶ Item value
- ▶ Host card
- ▶ Etc.

Navigator widgets

Navigator widgets use various filters to display a list of matching entities

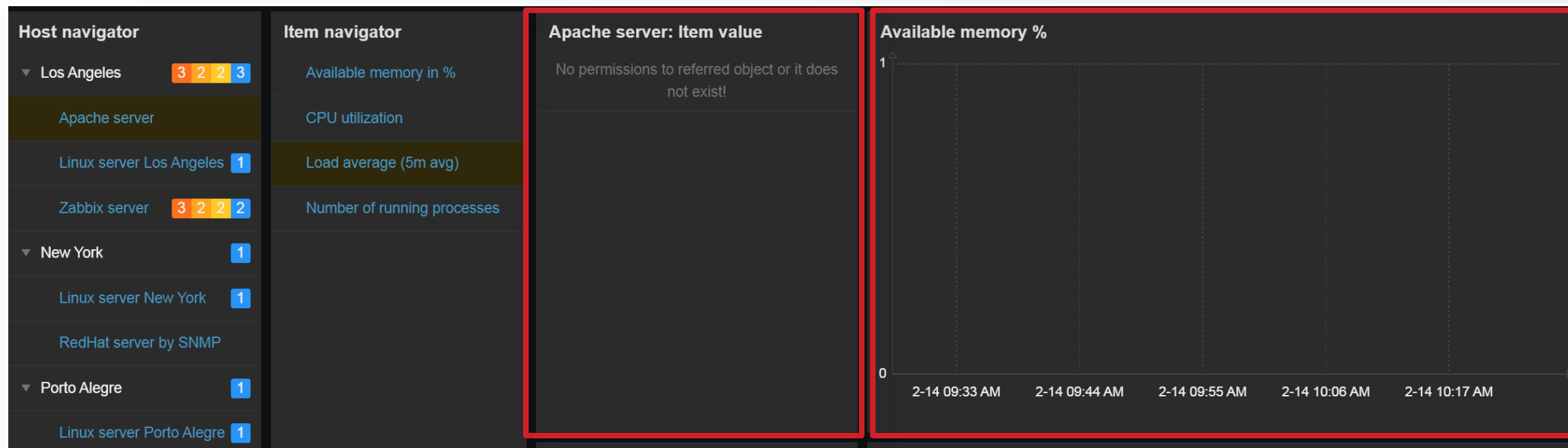
- ▶ The list can be grouped by tag values, host groups, problem severities and more
- ▶ Number and severity of matching problems is displayed next to the host and group



Broadcast and listen capabilities

If an item which does not exist on the host is selected via broadcast widgets, the linked listener widgets will be empty

- ▶ Ensure your broadcast widgets have proper filters as to not confuse users interacting with dashboards



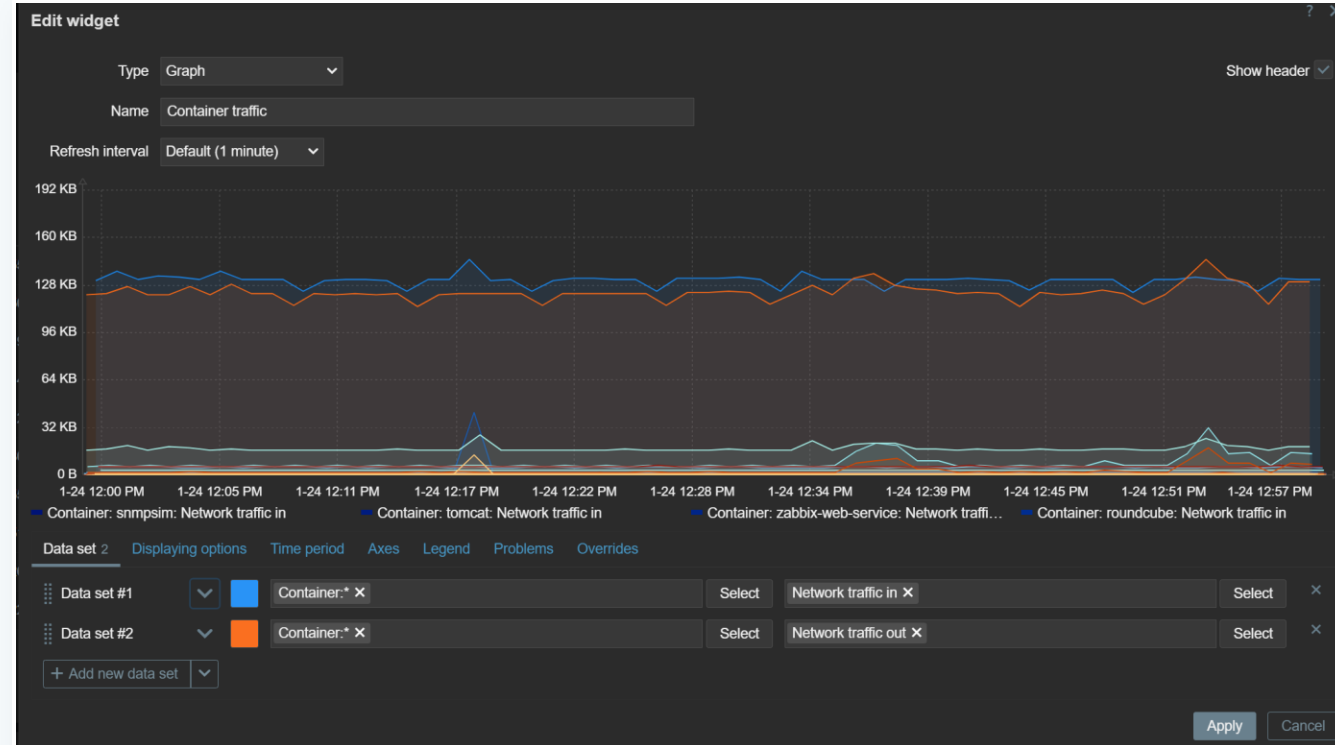


Advanced graph widget use cases

Graph widget

The Graph widget allows you to displays values in an SVG (Vector) graph

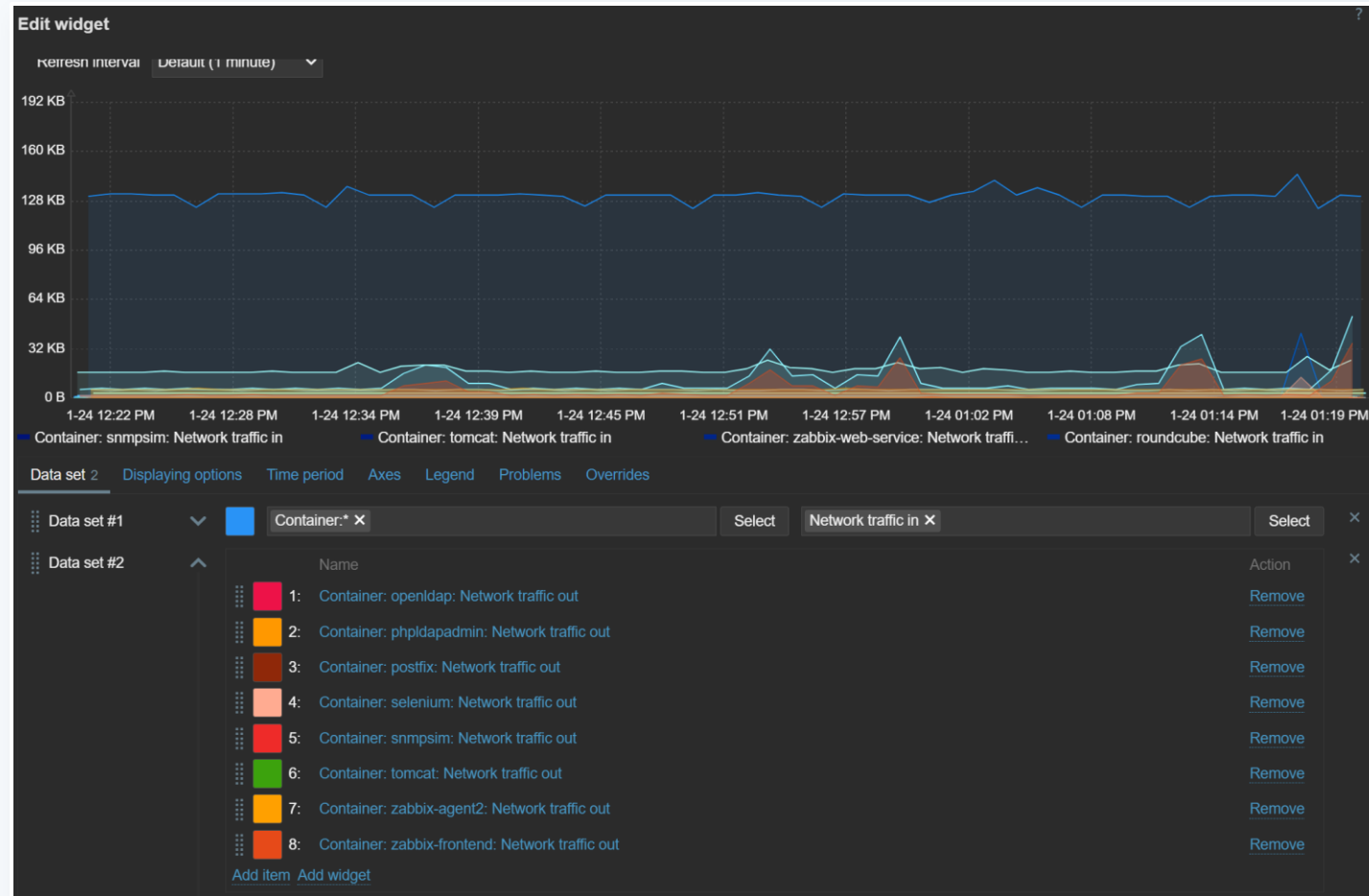
- ▶ Uses item and host patterns in data sets
- ▶ Supports various draw styles and visualization options
- ▶ Displayed values can be aggregated directly in the graph



Data sets

Graphs allow for two types of data sets

- ▶ Item pattern data sets
- ▶ Item list data sets
 - Item list can be linked to a broadcast widget
- ▶ Both data sets can be linked to an override host from a broadcast widget



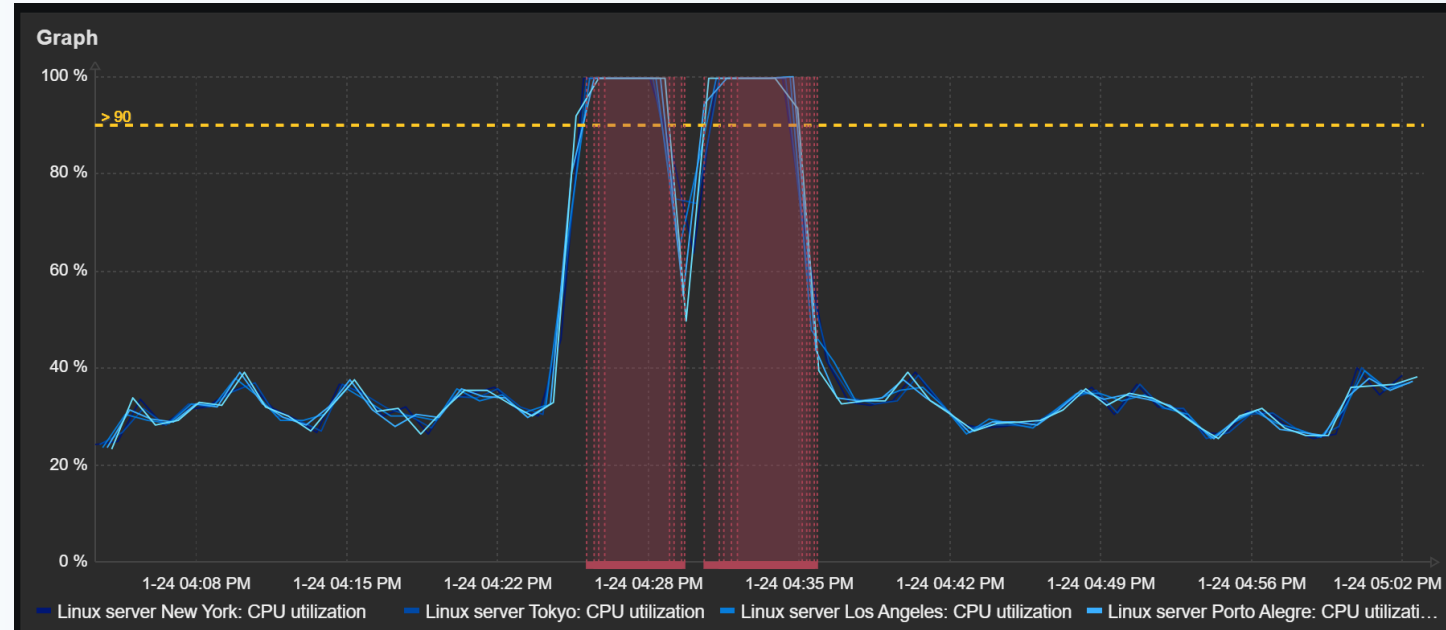
Trigger and problem display

Trigger thresholds can be displayed for simple triggers

- ▶ A simple trigger is a trigger with one function (only last, max, min, avg) for one item in the expression

Detected problems can be highlighted on the graph

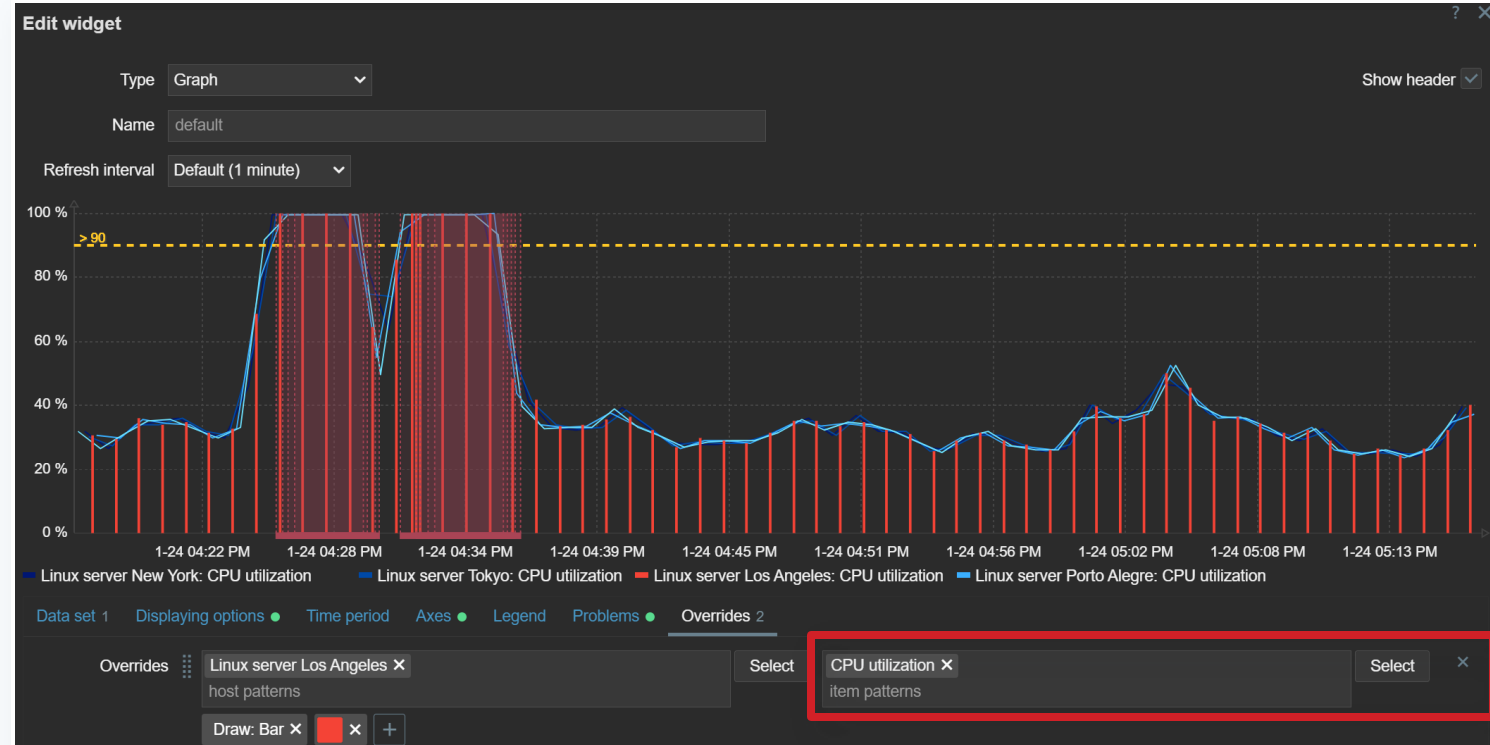
- ▶ The problems can be filtered by hosts, severities, tags and more



Overrides

The Overrides section can be used to make changes to matching items within existing datasets

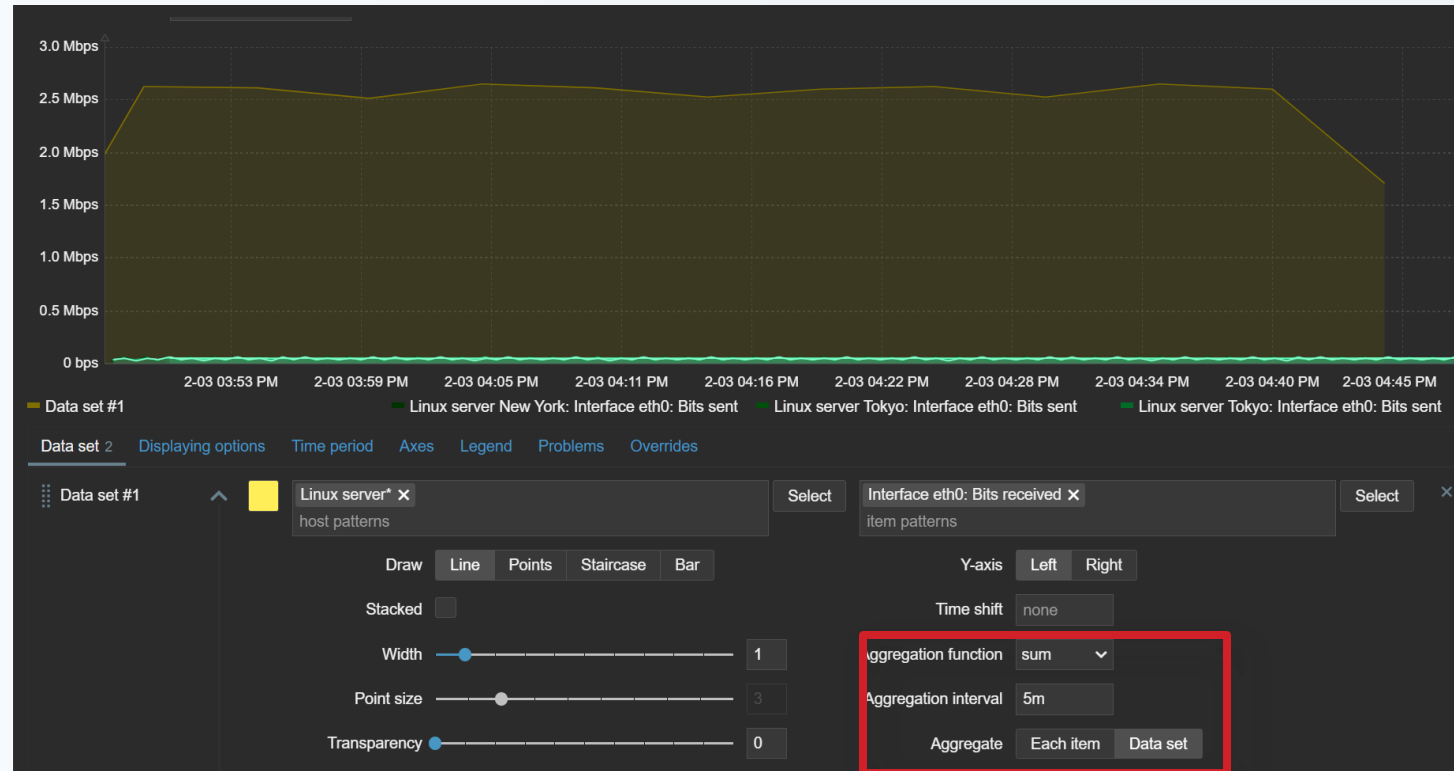
- ▶ This way an item or items can be visualized/emphasized in a unique way
- ▶ Draw style, color, missing data behavior, time shift and Y-axis display can be overridden.



Aggregation

Aggregations can be used to gather new insights directly from the dashboards

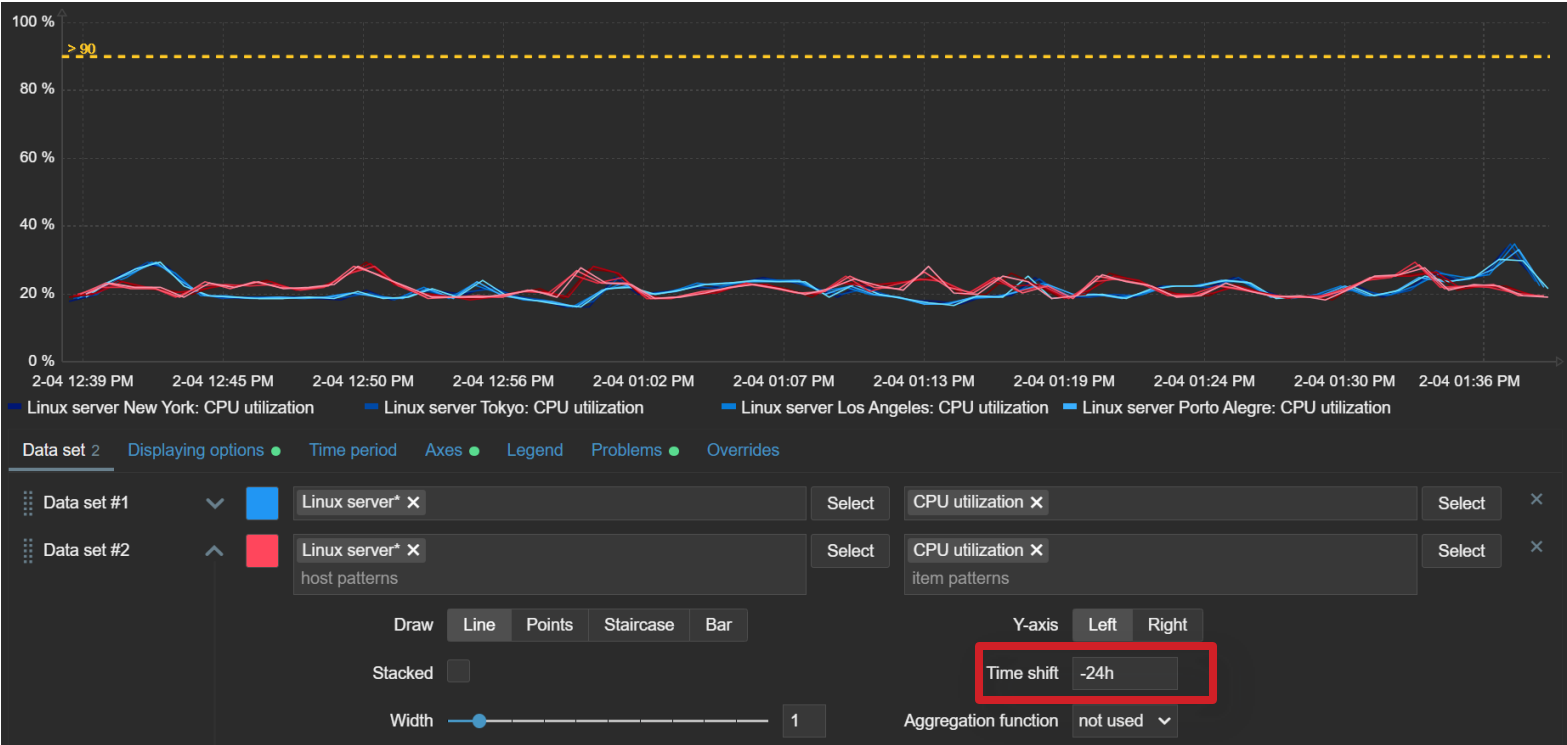
- ▶ Min, max, avg, sum, count and other aggregations
- ▶ Aggregate each item or the whole data set
- ▶ For example: Display total incoming traffic across all matched hosts



Time shift

Time shift can be used to display older data on the current timeline

- ▶ Useful for comparing old data points with current data

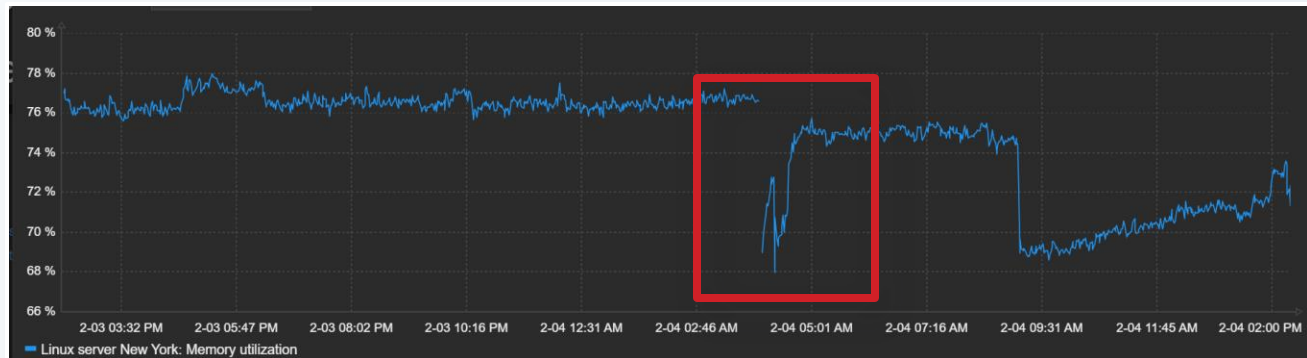


Missing data

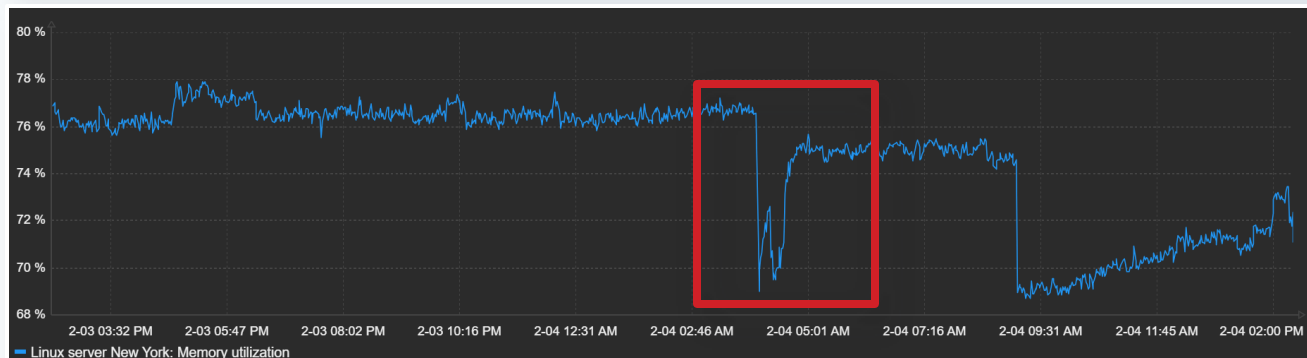
Graph widget provides multiple ways of visualizing missing values:

- ▶ Do not display missing values
- ▶ Connect last known value with the current value
- ▶ Treat them as 0
- ▶ Treat missing values as last known values

Do not display missing values



Connect last known value with the current value



Defining thresholds for widgets



Defining threshold for widgets

Threshold values can be defined for various widgets to make the visualization of data more dynamic

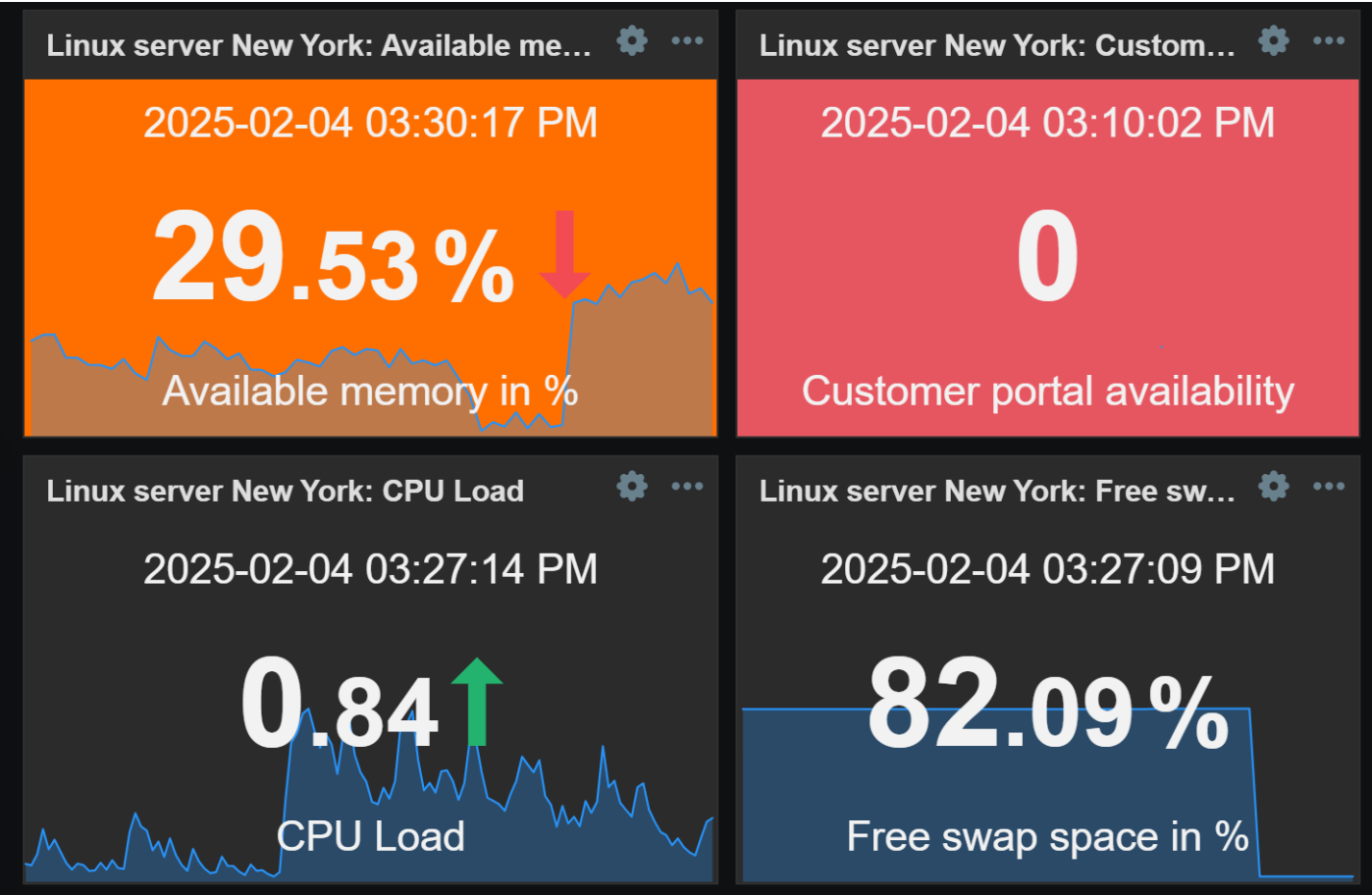
- ▶ Highlight a value once it exceeds a warning/critical threshold
- ▶ Highlight services/applications that are down
- ▶ Enables users to quickly detect issues in their environment
- ▶ Threshold values can be defined only for numeric data

Item value

Highlight item value in case if a threshold is reached

- ▶ Reaching and exceeding a threshold changes the background color of the widget

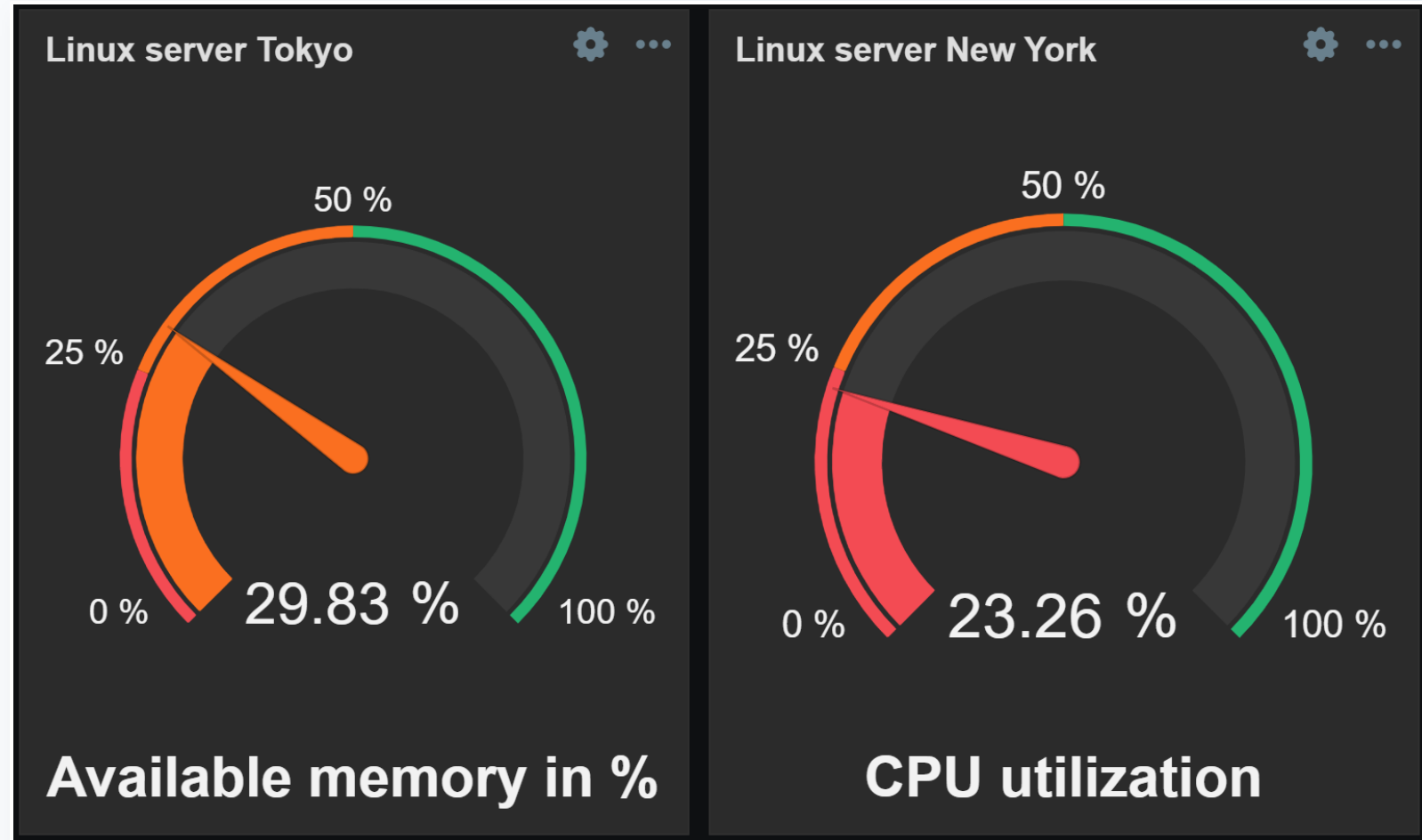
Thresholds	Threshold	
■	0	Remove
■	10	Remove
■	20	Remove
■	30	Remove



Gauge

Thresholds in gauges are useful to visualize current resource utilization

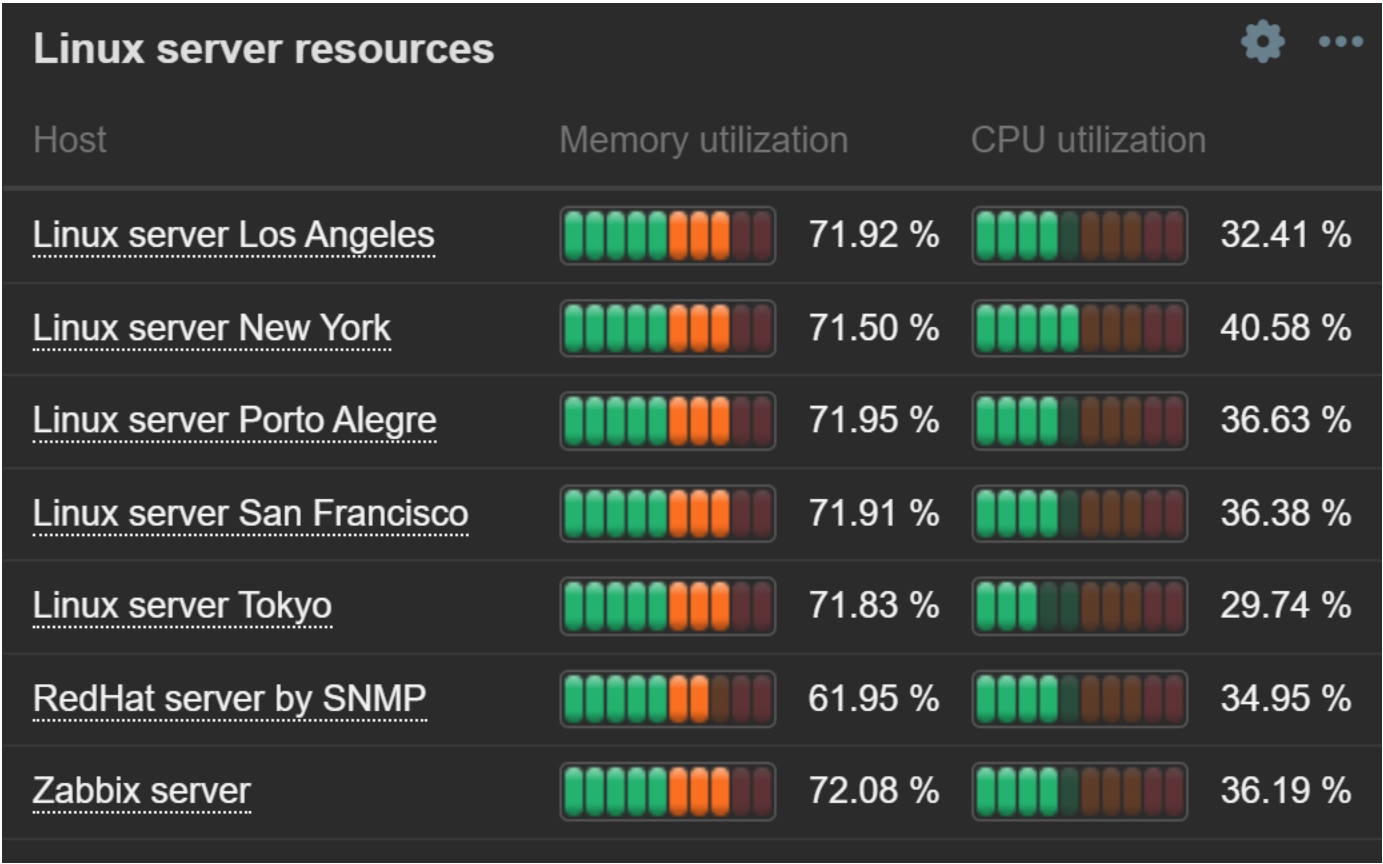
- ▶ Threshold arc and arc labels can be displayed or hidden



Top hosts/items

Thresholds are supported by Top hosts and Top items widgets

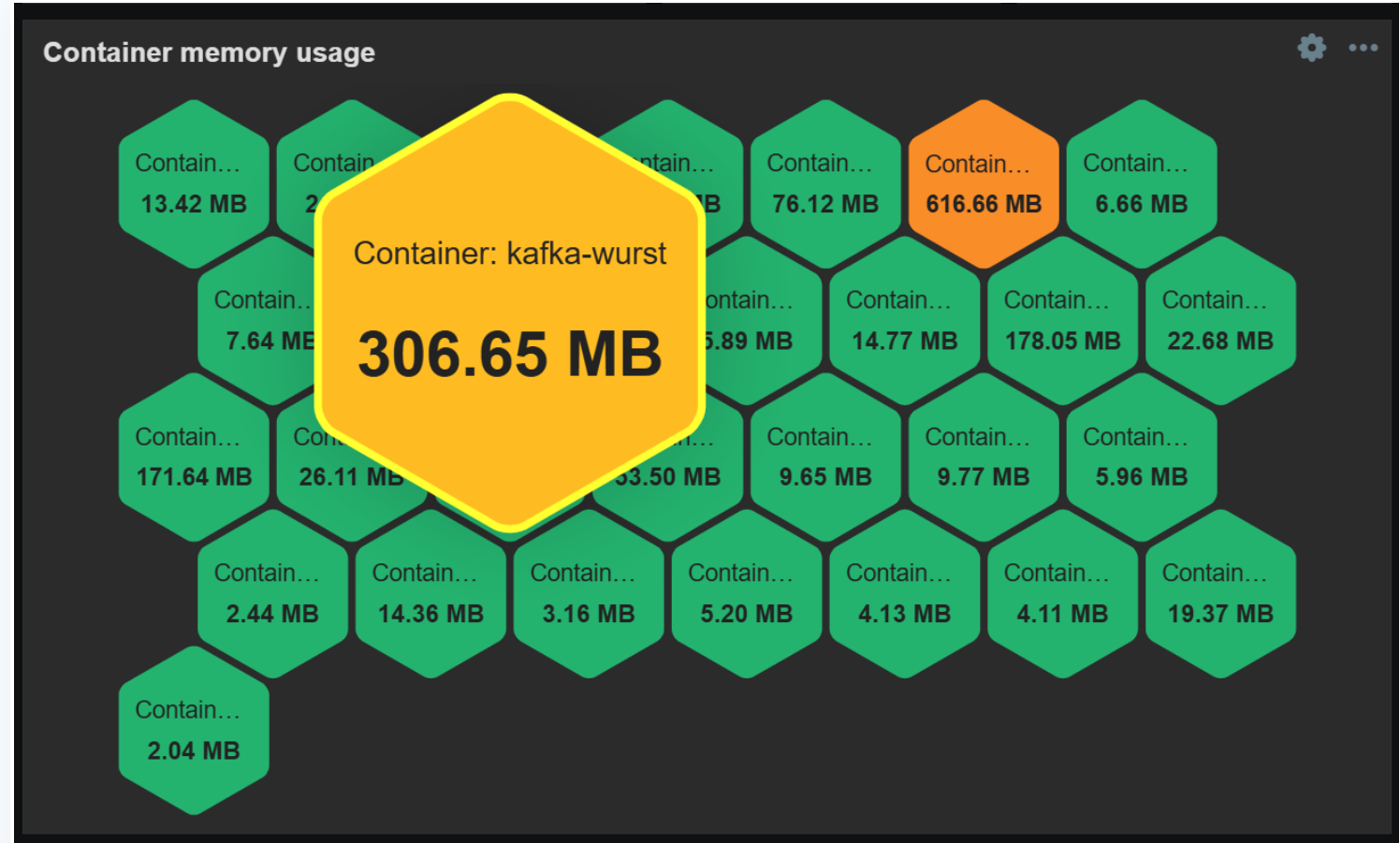
- ▶ Individual thresholds can be defined for each widget column
- ▶ Useful for getting a better overview when correlating utilization of various resources and statuses of applications/services



Honeycomb

Honeycomb widget supports defining multiple thresholds

- Color interpolation can be used to gradually transition between threshold colors



Dashboards for MSPs



Dashboard visibility

Dashboards can be private or public

- ▶ Public dashboards are available in read-only mode to every user
- ▶ Private dashboards are not visible to users by default
- ▶ Private dashboards require specifying explicit read/write permissions to users and user groups

Dashboard visibility

To modify dashboard sharing settings:

- ▶ Select Sharing options in the dashboard burger menu (not visible in the dashboard edit mode)

Dashboard sharing

TypePrivatePublic

List of user group shares

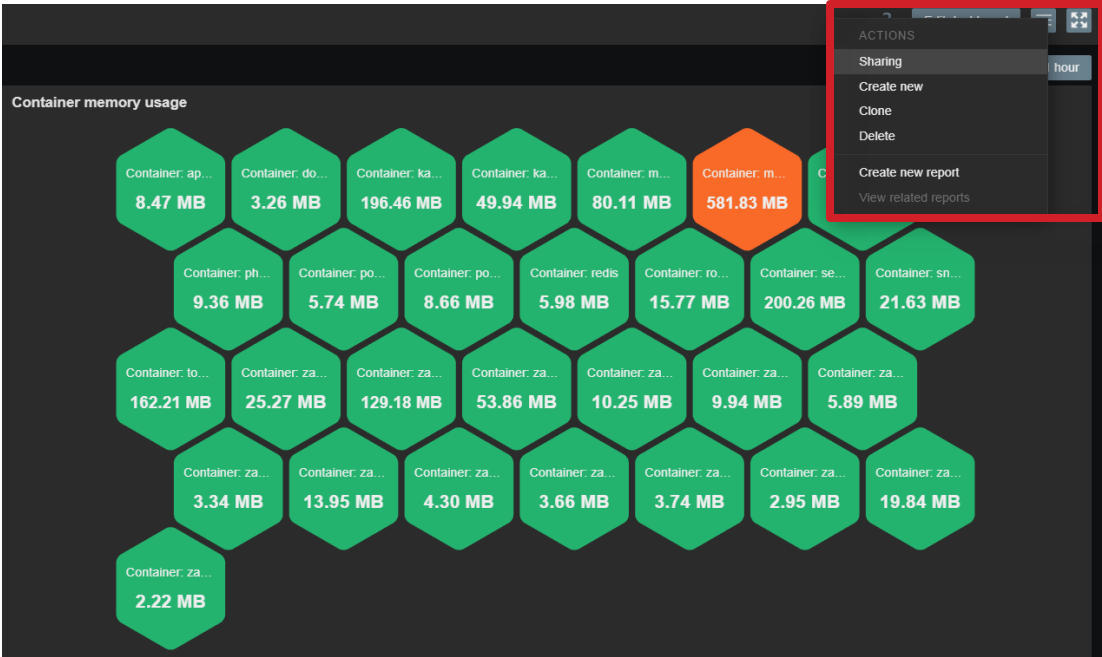
User groups	Permissions	Action
Customer ABC	<div>Read-onlyRead-write</div>	Remove
Add		

List of user shares

Users	Permissions	Action
Add		

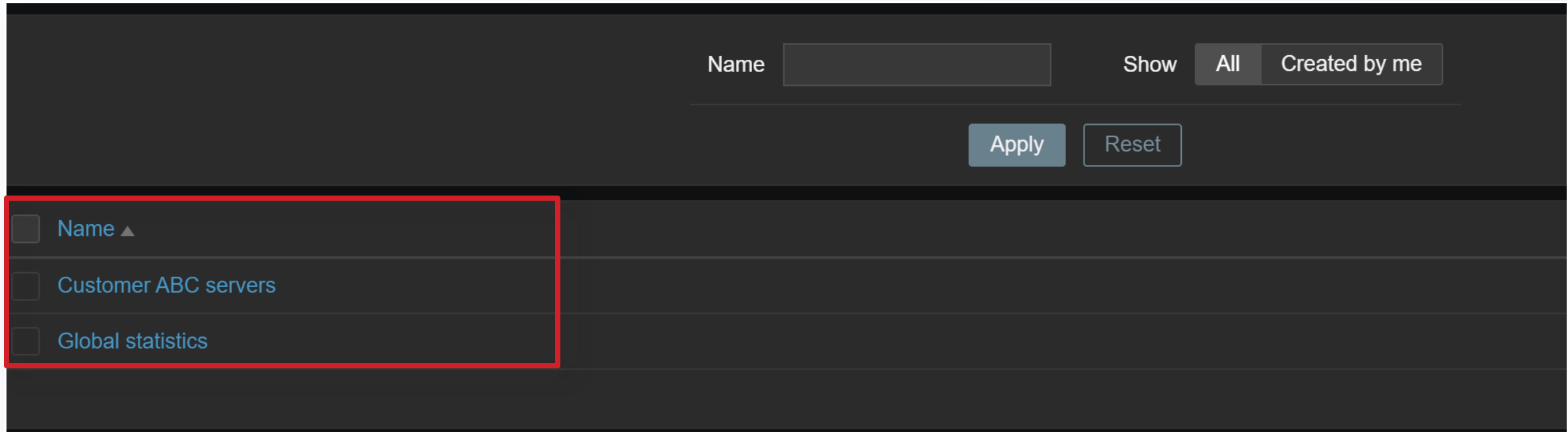
Update

Cancel



Dashboard visibility

Only public dashboards and private dashboards with assigned permissions will be visible to the user



The screenshot shows the Zabbix dashboard visibility filter interface. At the top, there is a search bar labeled "Name" with a text input field. To the right of the search bar are two buttons: "Show" and "All". Below the search bar are two buttons: "Apply" and "Reset". On the left side, there is a list of dashboards with checkboxes next to them. The list includes "Name ▲", "Customer ABC servers", and "Global statistics". The entire list is enclosed in a red rectangular box.

Name	Show
<input type="checkbox"/> Name ▲	All
<input type="checkbox"/> Customer ABC servers	
<input type="checkbox"/> Global statistics	

Host permissions

Only the hosts to which the user has at least read-only access will be visible on the dashboards the user has access to

User groups

User group Template permissions **Host permissions** ● Problem tag filter

Permissions	Host groups		Permissions	
	Customer ABC servers ✕ type here to search	Select	Read-write	Read
			Deny	Remove

[Add](#)

[Update](#) [Delete](#) [Cancel](#)

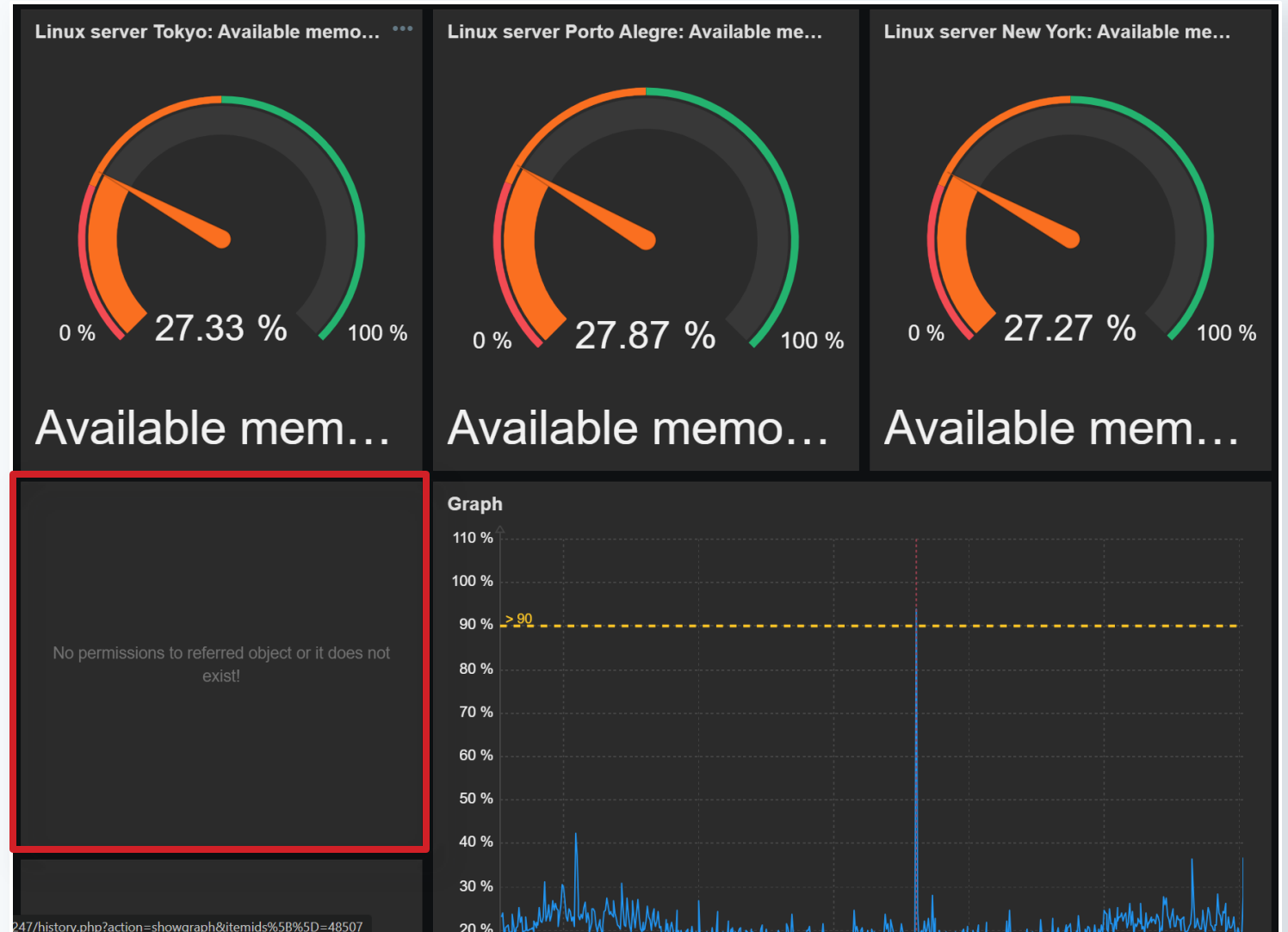
Restricting access to widgets

Access to widget can be limited for a particular user role

- ▶ Limiting the list of widgets to only the required ones improve the user experience
- ▶ Access to custom 3rd party widgets can also be restricted
- ▶ Access to widgets can be restricted system-wide under Administration General - Modules

Restricting access to widgets

The restricted widgets will display as empty with the message **“No permissions to referenced object or it does not exist”**




Dashboard owners

Users that are configured as dashboard owners cannot be deleted

- ▶ Change the owner or delete the dashboard during the user offboarding procedure

Users



Details ▲

Cannot delete user

User "Benelux" is dashboard "Customer ABC servers" owner.

Dashboard properties

* Owner

Benelux ✕

Select

* Name

Customer ABC servers

Default page display period

30 seconds ▼

Start slideshow automatically

☒



Other tips and tricks

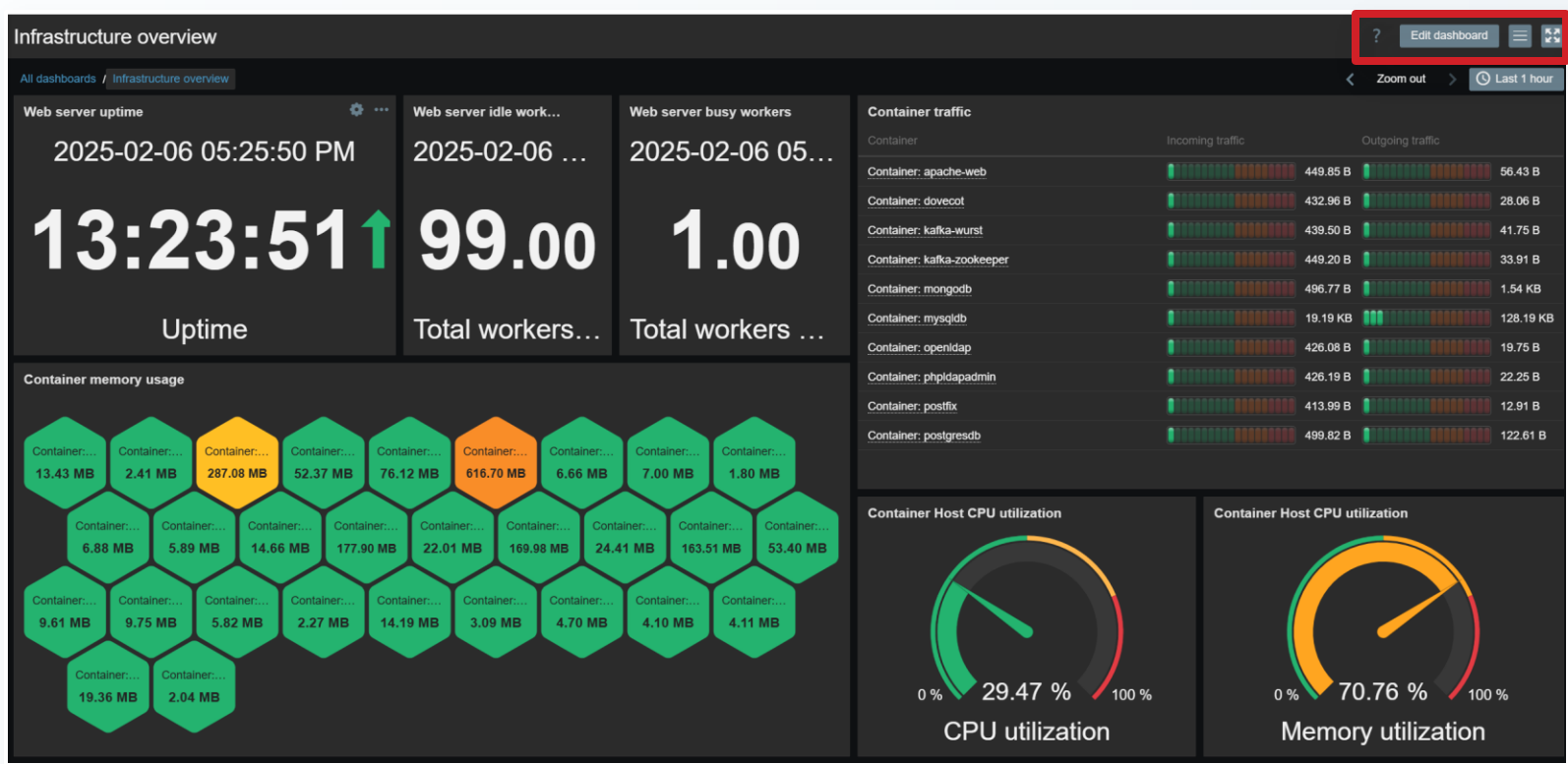
API method - dashboard.get

Zabbix API **dashboard.get** method allows to retrieve a dashboard for backup purposes

```
{
  "jsonrpc": "2.0",
  "result": [
    {
      "dashboardid": "1",
      "name": "Dashboard",
      "userid": "1",
      "private": "0",
      "display_period": "30",
      "auto_start": "1",
      "users": [],
      "userGroups": [],
      "pages": [
        {
          "dashboard_pageid": "1",
          "name": "",
          "display_period": "0",
          "widgets": [
            {
              "widgetid": "9",
              "type": "systeminfo",
              "name": "",
              "x": "12",
              "y": "8",
              "width": "12",
              "height": "5",
              "view_mode": "0",
              "fields": []
            }
          ]
        }
      ]
    }
  ],
}
```

Kiosk mode

Zabbix dashboards can be displayed in **kiosk mode** by pressing the kiosk mode button in the top right corner of the dashboard



Slideshows

Multi-page dashboards can be displayed in slideshow mode

- ▶ Accessible in dashboard settings while in edit mode
- ▶ Individual page display periods can be configured in page properties

Dashboard properties

* Owner Admin (Zabbix Administrator) X Select

* Name Linux server overview

Default page display period 30 seconds v

Start slideshow automatically ☒

Apply Cancel



Thank you!
