

Webinar

Data visualization with zabbix

all our microphones are muted ask your questions in Q&A, not in the Chat use Chat for discussion, networking or applause

Latest Data

ANNIN



Timestamp

2022-04-13 15:52:15 0.045

2022-04-13 15:51:15 0.045 2022-04-13 15:50:15 0.045

 2022-04-13 15:49:15
 0.045

 2022-04-13 15:48:15
 0.035

 2022-04-13 15:47:15
 0.035

 2022-04-13 15:46:15
 0.04

LATEST DATA

Monitoring > Latest data

- Performance data for a selected server/group
- Simple graphs
- Plain text information
- Config details

< Y								
	Host groups t	type here to search Zabbix server 🗙	Select	Tags And/Or C	Dr Contain	s Value Remove		
	Name	type here to search		Add Show tags None 1	2 3 Tag nam	e Eul Shortened None		
			1	Tan display priority	rated list			
				Show details	rated not			
Publiker affacts only filtered data			Save a	as Apply Reset				
Sublitter allects only littered data								
component 103 node-id 4 node-nam	ne 4							
component: application 1 cluster 4 node-id: cl1w239wq00014qnpj71; node-name: <u>None 4</u>	cpu 17 data-collector 13 enviror Ivxceh 4	nment 2 internal-process 20 memory 7 or	s 3 raw 1 storage 3 system 35	5				
component: application 1 cluster 4 node-id: cl1w239wq000014gnpj71 node-name: <u>None 4</u> DATA With data 53 Without data 50	cpu 17 data-collector 13 enviror Vxxceh 4	nment 2 internal-process 20 memory 7 o	<u>s 3 raw 1 storage</u> 3 <u>system</u> 35	5				
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Mon And State application 1 cluster 4 node-id: cftw.238wq00014qmpj/71 node-name: Nome 4 DATA With data 53 Without data 50 Host Zabbix server Zabbix server Zabbix server Zabbix server Zabbix server Zabbix server	CPU 17 data-collector 13 environ Vxxceh 4 Name A Available memory 12 Checksum of /etcipasswd Cluster node []: Address 12 Cluster node []: Last access ag	ament 2 internal-process 20 memory 7 pr	5.3 <u>raw 1 storege 3 system 35</u> Last check 7h 57m 18s 18s	5 Last value localhost 10051 00.00.00	Change	Tags component: memory component: memory component: environment component: cluster mode-id: c1tw239wq00 node-name component: cluster mode-id: c1tw239wq00 node-name	Graph Graph History History Graph	
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LATEST DATA

💥 initMAX < 🐔	Rocky01: CPU utilization					View as Graph	× 🔂 🔀
LAB						< Zoom out >	Last 1 hour
	From	now-1h		Last 2 days	Yesterday	Today	Last 5 minutes
Monitoring	То	now		Last 7 days	Day before yesterday	Today so far	Last 15 minutes
Dashboard				Last 30 days	This day last week	This week	Last 30 minutes
Problems		Ap	рріу	Last 3 months	Previous week	This week so far	Last 1 hour
Hosts				Last 6 months	Previous month	This month	Last 3 hours
110313				Last 1 year	Previous year	This month so far	Last 6 hours
Latest data				Last 2 years		This year	Last 12 hours
Maps						This year so far	Last 1 day

In the top right, there is a time period selector

- > It allows to select required period with a mouse click
- > This allows to show values for specific time period



SIMPLE GRAPHS

> History (raw data)



Trends (min, max, avg)





SIMPLE GRAPHS

~ >
Remove
e
Info
Graph
Graph
Displaying 2 of 2 found
e



SIMPLE GRAPHS





SIMPLE GRAPHS



Tags vs Applications

Group of items

- > One application, many items
- > One item, many applications
- Since Zabbix 5.4 Aplications moved to Item Tags

Host groups	type here to search	Select	Tags And/Or Or				
Hosts	Rocky01 ×	Select	Application	Equals	~ 0	CPU	Remove
	type here to search		Add	Exists			
Name	a		Ohow taga Nana 1 2	Equals	rte	nod None	
			Show tags None 1 2	Contains	rte	ned None	
		Tag dis	comma-separate	d list Does not e	xist		
		s	how details	Does not e	quai		
				Dues not o	Unitain		
		Save as	Apply Reset				
ıta							
Name 🔺		Last check	Last value	Change	Tags		
Context switches per seco	nd	15s	921.9097	+146.2828	Application: C	PU	
CPU guest nice time		14s	0 %		Application: C	PU	
CPU guest time		13s	0 %		Application: C	PU	
CPU idle time		5s	95.8894 %	-1.421 %	Application: C	PU	
CPU interrupt time		11s	0.2256 %	+0.0168 %	Application: C	PU	
CPU iowait time 👔		16s	0.01671 %	+0.008357 %	Application: C	PU]	







Graphs and Classic graphs

REALINE



CUSTOM GRAPHS (LEGACY)

Configuration > Templates > Graphs

- > Multiple items in a single customized graph
- > Multiple graph types
- Normal
- Stacked
- > Pie
- Exploded pie



CUSTOM GRAPHS (LEGACY)

- Legend, working time, trigger line, percentile lines (left/right)
- > Automatic, fixed or referenced Y axis min/max
- Multiple items on two axis with different colors & draw styles

Name	MySQL o	operations					
Width	9	900					
Height	2	200					
Graph type	Normal	*					
Show legend	×.						
Show working time							
Show triggers							
Percentile line (left)							
Percentile line (right)							
Y axis MIN value	Calculate	id v					
Y axis MAX value	Calculate	id v					
Items	N	IAME	FUNCTION	DRAW STYLE	Y AXIS SIDE	COLOUR	ACTION
	1: T s	Template App MySQL: MySQL begin operations second	per avg 🔻	Line •	Left 🔻	C8C800	Remove
	2: T 8	Femplate App MySQL: MySQL commit operation: second	s per avg 🔻	Line v	Left •	006400	Remove
	3; T s	Template App MySQL: MySQL delete operations second	per avg v	Line 🔻	Left •	C80000	Remove
	4: T s	Femplate App MySQL: MySQL insert operations (second	per avg 🔻	Line •	Left •	0000EE	Remove
	∬ 5: T 8	Template App MySQL: MySQL rollback operation second	ns per avg ▼	Line •	Left •	640000	Remove
	6; T s	Template App MySQL: MySQL select operations second	per avg •	Line •	Left •	00C800	Remove
	7: T 5	Template App MySQL: MySQL update operations second	s per avg 🔻	Line •	Loft •	C800C8	Remove
	Add						

CUSTOM GRAPHS (LEGACY)

Ability to select what values will be displayed for Trend graphs:

- > avg display the average values
- Iast display the latest values
- > max display the maximum values
- > min display the minimum values
- > all display all possible values

CUSTOM GRAPHS (NEW)

- > In version 4.0 the graph widget was updated to use redesigned new graphs!
- Legacy graph widget has been renamed to Graph (classic)

CUSTOM GRAPHS (NEW)

- Uses vector image file format
- > Displaying of values is based on Data sets, which are comprised of hosts and items
- > Wildcard use is supported when referencing hosts/items!

 Zabbix server: Zabbix co 	onfiguration ca	ache, % u 💻 Zabbix sei	rver: Zabbix history	index cac	he, % us	 Zabbix serve 	r: Zabbix history	write cache, % used	
	Data set	Displaying options	Time period	Axes	Legend	Problems	Overrides		
Data set	Zabl host	bix server ★ pattern		Select	*cache item pa	e* 🗙 attern		Select	×
	Base col	our FF465C				Missing data	a None	Connected Trea	at as 0

> Parameters of a Data set element can be overriden in the "Overrides" section

CUSTOM GRAPHS (NEW)

The following graph types are supported for the New graph:

- > Line
- Points
- Staircase
- Bar

Maps

3

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MAPS

- A Map is a graphical representation of data
- Real-time data can be shown (e.g. CPU load, bandwidth, etc.)
- If some event occurs, icon status or link color on the map is changed automatically
- Access to scripts, as well as links to other pages

MAPS

- > Configuration for the entities is available under Monitoring
- > All users in Zabbix (including non-admin users) can create network maps

MAPS

Map properties:

- > Name, dimensions
- Background image
- Icon highlighting
- Icon label type and location

- Min. trigger severity
- VRLs

Map elements:

- Image
- > Trigger
- Host
- Host group
- Map
- Shape

MAPS

- > Different icons for different states
- > Custom URLs & labels
- Drag and drop editing
- Moving and copy-pasting
- Icon alignment, macro expanding
- > Map links with labels and different styles
- > Macros in labels for elements and links

MAPS – ACKNOWLEDGE Status

WIN-BS768P0N4TA 6 Problems

WIN-BS768P0N4TA 5 Unacknowledged

WIN-BS768P0N4TA 6 Problems 5 Unacknowledged

MAPS - Icons

Icons are used to represent map elements:

- Host icon representing status of all triggers of the host
- Map icon representing status of all elements of a map
- Trigger icon representing status of one or more triggers
- > Host group icon representing status of all triggers of all hosts belonging to the selected group or host group elements
- Image an icon, not linked to any resource
- > To add an element to map user must have at least read permission
- Map elements that user does not have read permission to are displayed with a greyedout icon

MAPS - Shapes

In addition to icons, it is also possible to add shapes

- > Shapes are just a visual representation
- > For example, a rectangle shape can be used as a background to group some hosts

MAPS - CUSTOM ICONS AND BACKGROUNDS

You can upload your own custom icons/backgrounds in the Administration – General – Images section!

> Select the Type of the image that you wish to upload

> Upload the image

MAPS - HINTS

- > You can define map hierarchy by using submaps
- To display data on Elements or links, use map labels, ex: {?last(/{HOST.HOST}/system.cpu.load)} or {?last(/WiFi/net.if.out[ifHCOutOctets.1])}
- > If links are the same color as the background, they will appear only when a problem is active!
- Use macros in URL's: {\$HOST.CONN}, {\$HOST.IP}, {\$HOST.DNS}
- > By default the links are a straight line route links by using invisible icons or shapes
- > Use icon mappings to assign icons to matching hosts automatically

Icon Mapping

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Icon Mapping

Map elements can have different icons assigned to them

- > It is possible to map Icons to host elements automatically by using icon mapping
- Icon mapping is based on Host inventory values
- Icon map has to be defined in Administration Icon mapping
- > The specific Icon map has to be selected in the map Properties section

Maps				Network maps	
				Map Sharing	
	Name	Apply	eset	 * Owner Admin (Zabbix Administrator) × * Name Local network * Width 680]
Name ▲	Width	Height	Actions	Background image No image	
Local network	680	200	Properties Constructor	Automatic icon mapping Server mapping * show icon mappings	

Icon Mapping

> You can use host inventory to either populate the inventory values manually or automatically

	Disabled Manual Aut	tomatic		
Туре	Zabbix Server	Populate inventory value n	nanually	
Type (Full details)				
Name			← System name	Populate inventory value from item
Alias				
OS			← Operating system	
OS (Full details)				
OS (Short)	Centos 8			

> In Automatic mode, the inventory values are obtained from any item on the host

	Hardware Hardware (Full details) Software Software (Full details)
	Software application A
	Software application B
Populates host inventory field	Software application A <

Icon Mapping

Create the Icon map

* Name	Serv	ver mapping			
* Mappings		Inventory field	Expression	Icon	Action
	1:	Туре •	Linux Server	Server (64)	Remove
	2:	Туре •	Windows Host	Notebook (64)	Remove
	3:	Туре •	Zabbix Host	Workstation (64)	Remove

- Assign the icon map to your map
- > Select "Automatic icon selection" on your host element

Automatic icon selection			
Icons	Default	Zabbix server 3D (128)	▼
	Problem	Default	▼
	Maintenance	Default	▼
	Disabled	Default	▼

If the "Automatic icon selection" is greyed out, make sure that the icon map is assigned in the map properties section!

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Dashboards and Widgets

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Dashboards

Zabbix Dashboard is your central points of monitoring.

You can have a wide variety of different dashboards for different user groups:

- > A dashboard for your networking team
- > An infrastructure overview dashboard based on your Zabbix maps
- > A dashboard displaying live statistics of your business, e.g: website traffic
- > And much, much more!

Problems	3		* 0	Мар
Time 🔻	Recovery time Status	Info Host	Problem • Severity	
16:08:32 -	PROBLEM	server.hp.proliant-g9	Ambient: Temperature is above critical threshold: >35	Em Proprie
16:08:31 •	PROBLEM	server.hp.ilo	Ambient: Temperature is above critical threshold: >35	· A A A
16:08:04	16:10:04 RESOLVED	net.cisco.c2911	Interface Gi0/0(): Link down	
16:08:04	16:10:04 RESOLVED	net.cisco.c2911	Interface Gi0/1(): Link down	
16:05:35	16:08:35 RESOLVED	os.win.2008r2-2	#10: High CPU utilization	
16:05:35	16:08:35 RESOLVED	os.win.2008r2-2	#2: High CPU utilization	the state of the s
16:05:35 •	16:08:35 RESOLVED	os.win.2008r2-2	#21: High CPU utilization	The for the for the for the
16:05:35	16:08:35 RESOLVED	os.win.2008r2-2	#46: High CPU utilization	and the property of the second

Widgets

Dashboards consist of widgets.

> Widgets can represent data related to wide variety of different Zabbix elements, for example:

Graphs

Problems

Maps

- Latest data
- External sites

>

Add widget		
Туре	Graph	~
Name	Graph	
	Graph (classic)	
Refresh interval	Graph prototype	
1 ⁺	Host availability	
	Item value	
	Мар	
	Map navigation tree	
	Plain text	
	Problem hosts	
	Problems	
	Problems by severity	
	SLA report	
	System information	
0	Top hosts	
4-14 08:06	Trigger overview	

Widgets

Most of the widgets can be filtered by hosts, host groups, items, triggers and customized in other ways:

Edit widget			Zabbix agent host availability * 🖻
Туре	Problems Show h	eader 🗹	14 Available
Name	NY Dracle problems		
Refresh interval	Default (1 minute) •		0 Not available
Show	Recent problems Problems History		12 Unknown
Host groups	Oracle servers × type here to search	Select	26 Total
Exclude host groups	type here to search	Select	
Hosts	type here to search	Select	
Problem			
Severity	Not classified		
	Information		
	Warning		
	✓ Average		
	✓ High		
	✓ Disaster		
Tags	And/Or Or		
	DC Contains Equals New York	Remove	

🐹 initMAX

Data visualization with zabbix

Widgets

Some widgets are interactive. For example, you can use a Map navigation tree widget to switch between maps:

Widgets - Geomap

The Geomap widget allows you to display your hosts and problems on a geographical map

Widgets – Top Hosts

The Top hosts widget can be used to display a list of Top N or Bottom N hosts sorted by an item value

Top Hosts					
Host	CPU	CPU BAR	MEM	Disk /	Zabbix Agent
Server_0009.DEMO	21.1398 %	21.1398 %	32.1901 %	25.916 %	
Server_0002.DEMO	20.9575 %	20.9575 %	32.24 %	25.916 %	
Server_0007.DEMO	20.834 %	20.834 %	32.1861 %	25.916 %	
Server_0004.DEMO	20.4971 %	20.4971 %	32.1869 %	25.916 %	

Widgets – Item value

The single item widget allows you to display values for a single metric

> Can be used in template dashboard

Edit widget			×
Туре	Item value	∽ Show	header 🗸
Name	default]
Refresh interval	Default (1 minute)	~	
* Item	Zabbix server: Clust	er node [rocky01]: Status 🗙	Select
* Show	 Description 	Value	
	✓ Time	Change indicator	
Advanced configuration	✓		
* Description 🔮	{ITEM.NAME}		
			1
	Horizontal position	Left Center Right Size 15	%
	Vertical position	Top Middle Bottom Bold	
		Color D	
Value	Decimal places	2 Size 35	%
	Horizontal position	Left Center Right Size 45	%
	Vertical position	Top Middle Bottom Bold 🗸	
		Color D	
	✓ Units		
	Position	After value V Size 35	%
		Bold 💌	
		Color D	
Time	Horizontal position	Left Center Right Size 15	9%
		Apply	Cancel

Rebranding

REALINE

Rebranding

Customize your Zabbix instance to represent your organization.

- Replace the existing Zabbix branding and Help page URL with your own organization branding and a custom website URL.
- The rebranding feature does not violate the Zabbix license agreement - you're free to replace the Zabbix branding at your leisure!


```
local/conf/brand.conf.php
<?php
return [
    'BRAND_LOGO' => './images/custom_logo.png',
    'BRAND_LOGO_SIDEBAR' => './images/custom_logo_sidebar.png',
    'BRAND_LOGO_SIDEBAR_COMPACT' => './images/custom_logo_sidebar_compact.png',
    'BRAND_FOOTER' => ,© initMAX',
    'BRAND_HELP_URL' => 'https://www.initmax.cz/help/'
];
```

Demonstration

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Questions?

initMAX

Data visualization with zabbix

CONTACT US:

Phone:	\sum	+420 800 244 442
Web:	\sum	https://www.initmax.cz
Email:	\sum	tomas.hermanek@initmax.cz
LinkedIn:	\sum	https://www.linkedin.com/company/initmax
Twitter:	\sum	https://twitter.com/initmax
Tomáš Heřmánek:	\sum	+420 732 447 184