

Webinar

Reporting in Zabbix

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

Reporting overview

REALING

Reporting overview

- The Reports menu features several sections that contain a variety of predefined and usercustomizable reports focused on displaying an overview of such parameters as system information, triggers and gathered data.
- From version Zabbix 5.4 Scheduled reports Users with sufficient permissions can configure scheduled generation of PDF versions of the dashboards, which will be sent by email to specified recipients.







Menu - Reports

REALINE



Menu – Reports – System information

> System information is displaying a summary of key data on Zabbix server and its system.

💥 initMAX	System information			
٩	Parameter		Value	Details
Dashboards	Zabbix server is running		Yes	hosting1.tomashermanek.cz:10051
Monitoring ~	Zabbix server version		7.0.0alpha5	
° • •	Zabbix frontend version		7.0.0alpha5	
Number of hosts (enabled/disabled)			1049	1046 / 3
≔ Inventory ~	Number of templates		181	
Reports ^	Number of items (enabled/disabled/n	ot supported)	5156	4625 / 369 / 162
System information	Number of triggers (enabled/disabled	l [problem/ok])	975	807 / 168 <mark>[9</mark> / 798]
Scheduled reports	Number of users (online)		13	1
Availability report	Required server performance, new v	alues per second	56.27	
Top 100 triggers	High availability cluster		Enabled	Fail-over delay: 1 minute
Audit log	Name Address		Last access	Status
Action log	node1 localhost:10051		4s	Active
Notifications				



Menu – Reports – System information

- Super useful after upgrade
- In Zabbix version 7.0
 - > Current server version number is displayed.
 - Zabbix frontend version number is displayed.
- In Zabbix version 5.0
 - Database history tables upgraded
- With the high availability setup enabled, a separate block is displayed below the system stats with details of high availability nodes. This block is visible to Zabbix Super Admin users only.





Menu – Reports – Scheduled reports

> Users with sufficient permissions can configure scheduled generation of PDF versions of the dashboards, which will be sent by email to specified recipients.

💥 initMAX 🛛 « 🗂	Scheduled repo	orts						C	eate report
Q									T Filter
Dashboards		Name		Show All Created	by me	Status Any Enabled	d Disabled Expired		
Monitoring ~				Apply	Reset				
음 Services ·	Name ▲	Owner			Repeats	Period	Last sent	Status	Info
i≡ Inventory ~	Demo report	tomas.hermanek@initma	x.cz (Tomáš Heřmánek)		Weekly	Previous week	2023-10-01 06:14 PM	Enabled	
Reports ^								Displaying	l of 1 found
System information	0 selected Enable	Disable Delete							
Scheduled reports									
Availability report									
Top 100 triggers									
Audit log									
Action log									
Notifications									



Menu – Reports – Scheduled reports

- > PDF report is only for a dashboard
- Zabbix have a separate package for reporting
- Reports can be created only from the first page
- Can respect recipient user permissions

> We will talk more about this topic a bit later





Menu – Reports – Availability report

You can see what proportion of time each trigger has been in problem/ok state. The percentage of time for each state is displayed.

X	initMAX « 🗂	Availability re	port			Mo	de By host	~
	Q					< Zoom out >	Last 2 years	T Filter
⊞ ⊚ ∘	Dashboards Monitoring ~		Host gro Ho	Ips DEMO/hosts × type here to search sts DEMO-SERVER ×	Select			
یں اللہ اللہ اللہ اللہ اللہ اللہ اللہ اللہ	Services · Inventory · Reports ^	Host	Name	type here to search Apply Reset		Problems	Ok	Graph
	System information	DEMO-SERVER	avg(/Advanced problem detection/system.cpu.load,1h)> 2 * a	g(/Advanced problem detection/system.cpu.load,1h:n	low-7d)	1.1712%	98.8288%	Show
	Scheduled reports	DEMO-SERVER	Host name of zabbix_agentd was changed on DEMO-SERVE	२		1.1998%	98.8002%	Show
	Availability report	DEMO-SERVER	last(/server/net.tcp.service[http]) = 0			0.0004%	99.9996%	Show
	Top 100 triggers	DEMO-SERVER	last(/server/system.cpu.load) > 5			1.3124%	98.6876%	Show
	Audit log	DEMO-SERVER	last(/server/system.cpu.load) > 5			25.0072%	74.9928%	Show
	Action log	DEMO-SERVER	last(/server/system.cpu.load) > 10			0.1608%	99.8392%	Show
	Notifications	DEMO-SERVER	max(/server/net.tcp.service[http],#3) = 0				100.0000%	Show



Menu – Reports – Availability report

You can see what proportion of time each trigger has been in problem/ok state. The percentage of time for each state is displayed.

🐹 initMAX 🛛 « 🗂	Availability report				Node By trigger template ~
Q				< Zoom out >	S Last 2 years
Dashboards	Template group	Templates/DEMO ~			
Monitoring ~	Template	Advanced problem detection			
유 Services ·	Template trigger	last(/server/system.cpu.load) > 5		~	
i≡ Inventory ~	Host group	All ~			
Reports ^		Apply Reset			
System information	Host Name		Problems	Ok	Graph
Scheduled reports	DEMO-SERVER last(/set	rver/system.cpu.load) > 5	1.3124%	98.6876%	Show
Availability report					Displaying 1 of 1 found
Top 100 triggers					
Audit log					
Action log					
Notifications					



Menu – Reports – Availability report

- From the drop-down menu in the upper right corner, you can choose the selection mode whether to display triggers by hosts or triggers belonging to a template.
- The time period selector can be opened by clicking on the time period tab next to the filter.
- Clicking on Show in the Graph column displays a bar graph where availability information is displayed in bar format. Each bar represents a past week of the current year.





Menu – Reports – Triggers top 100

You can see the triggers that have changed their state most often within the evaluation period, sorted by the number of status changes.

X	initMAX « 🗂	Top 100 triggers								
	Q							< Zoon	out > 🕓	Last 7 days Tilter
⊞	Dashboards			From	now-7d	…	Last 2 days	Yesterday	Today	Last 5 minutes
\odot	Monitoring ~			То	now		Last 7 days Last 30 days	Day before yesterday This day last week	Today so far This week	Last 15 minutes Last 30 minutes
.	Services ~					Apply	Last 3 months	Previous week	This week so fa	ar Last 1 hour
≔	Inventory ~						Last 6 months Last 1 year	Previous month Previous year	This month This month so	Last 3 hours far Last 6 hours
	Reports ^						Last 2 years		This year	Last 12 hours
	System information								This year so fa	r Last 1 day
	Scheduled reports	Host	Trigger						Severity	Number of problems
	Availability report	DEMO-SERVER	Nothing to show						Disaster	44
	Top 100 triggers	DEMO-SERVER	last(/server/system.cpu.load) > 10						Average	18
	Audit log	DEMO-SERVER	last(/server/system.cpu.load) > 5						Warning	8
	Action log	idrac	System status is in warning state						Warning	6
	Notifications	wazuh.lab.initmax.cz	VMware: VM has been restarted						Warning	6



Menu – Reports – Triggers top 100

From Zabbix 7.0 - The possibility to filter triggers by problem name and tags has been added. (New widget has been added)

💥 initMAX 🛛 🛠 🎦	Top 100 triggers							
Q					< Zoom ou	ut > 🕓	Last 7 days	√ Filter
Dashboards	Host groups	type here to search	Select Problem tags	And/Or Or				
Monitoring ~	Hosts	type here to search	Select	Problem started with Load	Exists ~	Remove		
유 Services ·	Problem			Add	Exists Equals			
≔ Inventory ~	Severity	Not classified Varning Information Average	er		Contains Does not exist			
Reports ^			Apply Reset		Does not equal			
System information	Host	Trigger	Severity	Numb	per of problems			
Scheduled reports		Nothing to show	Disastor	14				
Availability report	DEMO-SERVER	Nothing to show	Disaster	44				
Top 100 triggers								
Audit log								
Action log								
Notifications								



Menu – Reports – Triggers top 100

- From Zabbix 7.0 you can use tags for filtering out unwanted data
- From Zabbix 7.0 you have a new widget
 Top triggers
- Super useful to find problem triggers or misconfiguration in thresholds or pointing you to certain problematic parts in your environment





Menu – Reports – Audit log

> Users can view a list of changes made in the frontend. (not only)

X	initMAX 🛠 🗂	Audit lo	g													
	۹											<	Zoom out	> (S	Last 7 days	T Filter
⊞	Dashboards			Users					Select	Resource	All	~				
\odot	Monitoring ~			Actions	Add	Co	nfiguratio	n refresh		Resource ID						
***	Services ~				Execute	E Fai	iled login gout		History clear	Recordset ID						
≣	Inventory ~				Update											
•	Reports ^								Apply Reset]						
	System information	Time	User		IP	Resource	ID	Action	Recordset ID	Details						
	Scheduled reports	2023-10-01	guest		202.67.46.43	User	2	Login	cln7pqahz0000qazm6yae305i							
	Availability report	07:05:20 PM														
	Top 100 triggers	2023-10-01	guest		164.90.200.139	User	2	Login	cln7otcna0000emzm3ykk350g							
	Audit log	06:39:43 PM														
	Action log	2023-10-01	guest		202.67.46.43	User	2	Login	cln7old2j00000gzmmkro1fhy							
	Notifications	06:33:30						-								



Menu – Reports – Audit log

- Reworked in version 6.0 The audit log now contains records about all configuration changes for all Zabbix objects, including changes that occurred as a result of executing an LLD rule, a network discovery action, an auto-registration action, or a script execution. Previously, configuration changes initiated from Zabbix server, for example, as a result of executing a discovery rule, were not recorded. Now such object modifications will be stored as audit records attributed to the user System. (After upgrade you lose old audit log data)
- From Zabbix 7.0 The auditlog table has been converted to a hypertable on TimescaleDB in new installations, to benefit from automatic partitioning on time (7 days by default) and better performance.
 - To successfully upgrade existing installations, you must re-run the timescaledb.sql script, located in the path database/postgresql, before starting Zabbix server. Zabbix server will log a warning, if started without running this script first.



Menu – Reports – Action log

 Users can view details of various operations executed within an action (notifications, remote commands, ...)

💥 initMAX 🔍 🖺	Action log							Export to CSV
Q						< Zoom ou	t > 🕓 Last 15	minutes T Filter
 □ Dashboards ○ Monitoring ~ ∴ Services ~ ∴ Inventory ~ Reports ~ 			From now-1 To now	5m	Last 2 days Last 7 days Last 30 days Last 3 month Last 6 month Last 1 year Last 2 years	Yesterday Day before yesterday This day last week Previous week Previous month Previous year	Today Today so far This week This week so far This month This month so far This year This year so far	Last 5 minutes Last 15 minutes Last 30 minutes Last 1 hour Last 3 hours Last 6 hours Last 12 hours Last 12 hours Last 1 day
System information	Time	Action	Media type	Recipient		Message		Status Info
Availability report Top 100 triggers Audit log Action log Notifications	2023-10-02 08:43:55 AM	Jira Servicedesk, MS Teams,PUSH, Email	Email	tomas.hermanek (Tomáš Ho tomas.hermanek@initmax.o	eřmánek) DZ	Subject: Problem: Meetup application Message: Problem started at 08:43:54 of Problem name: Meetup appli Host: Jira Servicedesk Severity: Warning Operational data: Down (0) Original problem ID: 1293411	is DOWN! on 2023.10.02 cation is DOWN!	Sent
						https://www.initmax.cz/zabbia	c-monitoring/	



Menu – Reports – Action log

- Trigger actions (Problems)
- Service actions (Services)
- Discovery actions
- > Auto-registration actions
- Internal actions (Unsupported items,...)





Menu – Reports – Notifications

> Notifications section is a report on the number of notifications sent to each user.

🐹 initMAX 🛛 « 🎦	Notifications					Media	type Al	· ·	Period V	/eekly	✓ Year 2	023 ~
Q										Ŷ		
🖽 Dashboards										eřmáne		
Monitoring ~									inek)	omáš H		
옮 Services ~			rator)						š Heřmá	ax.cz (T		
i≡ Inventory ~			vdminist						(Tomái	(@initma		
Reports ^			abbix A	S					srmanek	ermanek		
System information			nin (Z	Tean	etup	ona	st		as.he	as.he		
Scheduled reports	From	Till	Adn	MS	Mee	cord	ang		tom	tom		
Availability report	2022-12-26 12:00 AM	2023-01-02 12:00 AM										
Top 100 triggers	2023-01-02 12:00 AM	2023-01-09 12:00 AM							4			
Audit log	2023-01-09 12:00 AM	2023-01-16 12:00 AM										
Action log	2023-01-16 12:00 AM	2023-01-23 12:00 AM										
Notifications	2023-01-23 12:00 AM	2023-01-30 12:00 AM										



Menu – Reports – Notifications

- From the dropdown menu in the top right corner you can choose the media type (or all), period (data for each day/week/month/year) and year for the notifications sent.
- > Each column displays totals per one system user.



Scheduled reports

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Scheduled reports

> Users with sufficient permissions can configure scheduled generation of PDF versions of the dashboards, which will be sent by email to specified recipients.

X	initMAX « 🗂	Scheduled reports					Сге	ate report
	Q							√ Filter
⊞	Dashboards		Name	Show All Created by me	Status Any Enabled	Disabled Expired		
0	Monitoring ~			Apply Reset				
<u>.</u>	Services ~	Name ▲ Owner		Repeats	Period	Last sent	Status	Info
≣	Inventory ~	Demo report tomas.he	rmanek@initmax.cz (Tomáš Heřmánek)	Weekly	Previous week	2023-10-01 06:14 PM	Enabled	
	Reports ^						Displaying 1	of 1 found
	System information	0 selected Enable Disable	Delete					
	Scheduled reports							
	Availability report							
	Top 100 triggers							
	Audit log							
	Action log							
	Notifications							



Scheduled reports

- > PDF reports are only for dashboards
- Zabbix have a separate package for reporting (zabbix-web-service)
- Reports can be created only from the first dashboard page
- Can respect recipient user permissions
- Period for reported data is hardcoded (Previous day/ Previous week/ Previous month/ Previous year)
- Report generation frequency (daily/weekly/monthly/yearly)

* Owner	tomas.hermanek@initmax.cz (Tomáš Heřmánek) ×	Select							
* Name	Demo report								
* Dashboard	ZABBIX-DEMO ×	Select							
Period	Previous day Previous week Previous month Previous year								
Cycle	Daily Weekly Monthly Yearly								
Start time	10 : 00								
* Repeat on	✓ Monday ☐ Thursday								
	Tuesday Friday								
	Wednesday Saturday								
Start date	YYYY-MM-DD								
End date	YYYY-MM-DD								
Subject	Weekly demo report from {{TIME}.fmttime(%d %B,-1w/w)} to {{TIME}.fmttime(%d %								
Message	Previous day Yesterday {{TIME}.fmttime(%d/%m/%y,-1d)} Yesterday {{TIME}.fmttime(%d/%B/%Y,-1d)} {{TIME}.fmttime(%A %d %B %Y,-1d)} Previous week Week from {{TIME}.fmttime(%d/%m/%y,-1w/w)} to								
* Subscriptions	Recipient Generate report by Status Action								
	tomas.hermanek@init tomas.hermanek@ini Include Remove								
	Add user Add user group								
Description									
Enabled	\checkmark								
	Update Clone Test Delete Cancel								



Scheduled reports

- You can optionally choose Start or End date
- Macro {TIME} is supported in Subject and in Message
- For subscriptions (email notifications) it is possible to define user, group or exclude them
- Report can be generated not only by owner but also by recipient, the report then uses recipient permissions
- For test button you need to have minimal one email media with not-classified severity enabled
- Report can be created from menu or dashboard

* Owner	tomas.hermanek@initmax.cz (Tomáš Heřmánek) ×								
* Name	Demo report								
* Dashboard	ZABBIX-DEMO ×	Select							
Period	Previous day Previous week Previous month Previous year								
Cycle	Daily Weekly Monthly Yearly								
Start time	10 : 00								
* Repeat on	✓ Monday Thursday Sunday Tuesday Friday								
	Wednesday Saturday								
Start date	YYYY-MM-DD								
End date	YYYY-MM-DD								
Subject	Weekly demo report from {{TIME}.fmttime(%d %B,-1w/w)} to {{TIME}.fmttime(%d %								
Message	Previous day Yesterday {[TIME].fmttime(%d/%m/%y,-1d)} Yesterday {[TIME].fmttime(%d/%B/%Y,-1d)} {[TIME].fmttime(%A %d %B %Y,-1d)} Previous week Week from {[TIME].fmttime(%d/%m/%y,-1w/w)} to								
Subscriptions	Recipient Generate report by Status Action								
	tomas.hermanek@ini Include Remove Add user Add user group								
Description									
Enabled									
	Update Clone Test Delete Cancel								



Scheduled reports - Message

Subject (example for a week)

Weekly demo report From {{TIME}.fmttime(%d %B,-1w/w)} to {{TIME}.fmttime(%d %B %Y,-1w/w+6d)}

Weekly demo report from 18 September to 24 September 2023

Messages (examples)

Week from {{TIME}.fmttime(%d/%m/%y,-1w/w)} to {{TIME}.fmttime(%d/%m/%y,-1w/w+6d)} Week from {{TIME}.fmttime(%d/%B/%Y,-1w/w)} to {{TIME}.fmttime(%d/%B/%Y,-1w/w+6d)} Week number {{TIME}.fmttime(%W,-1w/w)}

Week from 18/09/23 to 24/09/23

Week from 18/September/2023 to 24/September/2023

Week number 38



Scheduled reports - Message

Messages (another examples)

```
Previous day
Yesterday {{TIME}.fmttime(%d/%m/%y,-1d)}
Yesterday {{TIME}.fmttime(%d/%B/%Y,-1d)}
{{TIME}.fmttime(%A %d %B %Y,-1d)}
```

Previous month
Month from {{TIME}.fmttime(%d/%m/%y,-1M)} to {{TIME}.fmttime(%d/%m/%y,-1d)}
Month from {{TIME}.fmttime(%d/%B/%Y,-1M)} to {{TIME}.fmttime(%d/%B/%Y,-1d)}
Month {{TIME}.fmttime(%B,-1M/M)}

More information about strftime function used in {TIME} macro

https://www.php.net/manual/en/function.strftime.php



Scheduled reports – Architecture

> Additional components are required

Zabbix web service (TCP 10053 by default)

Google chrome browser (You can also use Chromium, Firefox,...)

- Component Zabbix server and Zabbix web services can be installed separately
- Communications can be encrypted (Recommended)
- Zabbix web service is used only for loading and generating PDFs, for sending is used Zabbix server
- > Information about where is your Zabbix frontend is hardcoded! (be careful with HA)



Scheduled reports – Architecture

zabbix.initmax.com





Scheduled reports – Installation

> First you need to install Zabbix web service from Zabbix repository

dnf install -y zabbix-web-service

Another step is installing Google chrome repository (Recommended browser)

nano /etc/yum.repos.d/google-chrome.repo

```
[google-chrome]
name=google-chrome
baseurl=http://dl.google.com/linux/chrome/rpm/stable/$basearch
enabled=1
gpgcheck=1
gpgkey=https://dl-ssl.google.com/linux/linux_signing_key.pub
```



Scheduled reports – Installation

Last step is installing Google chrome from the repository

Don't worry you don't need to install the whole graphic environment

dnf install -y google-chrome-stable

If you have installed Zabbix server and Zabbix web services on same machine, you don't need any additional config setting in Zabbix web services, but you still need to change some config setting in Zabbix server config file.



Scheduled reports – Installation

> Enable web service in Zabbix server config 1/2

nano /etc/zabbix/zabbix_server.conf

```
### Option: StartReportWriters
# Number of pre-forked report writer instances.
#
# Mandatory: no
# Range: 0-100
# Default:
# StartReportWriters=0
StartReportWriters=1
```



Scheduled reports – Installation

> Set web service URL in Zabbix server config 2/2

nano /etc/zabbix/zabbix_server.conf

```
### Option: WebServiceURL
# URL to Zabbix web service, used to perform web related tasks.
# Example: http://localhost:10053/report
#
# Mandatory: no
# Default:
# WebServiceURL=
WebServiceURL=http://localhost:10053/report
```



Scheduled reports – Installation

> For **dedicated** Zabbix web service server, you need to change the default config

```
# nano /etc/zabbix/zabbix_web_service.conf
### Option: AllowedIP
        List of comma delimited IP addresses, optionally in CIDR notation, or DNS names of Zabbix servers and
#
        Zabbix proxies.
#
#
        Example: AllowedIP=127.0.0.1,192.168.1.0/24,::1,2001:db8::/32,zabbix.example.com
#
# Mandatory: yes
# Default:
# AllowedIP=
AllowedIP=127.0.0.1,::1
```



Scheduled reports – Installation

Restart all services and allow to start Zabbix web service after restart

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Scheduled reports – Installation

Last step of installation is to set up the correct URL for frontend in Administration > Other section (reachable Zabbix frontend URL for Zabbix web service server)

X	initMAX «	Č]	Other configuration parameters ~			
	· · · · · · · · · · · · · · · · · · ·		Frontend URL	https://www.initmax.cz/zabbix/		
	Dashboards		* Group for discovered hosts	Discovered hosts ×	Select	
\odot	Monitoring	~	Default host inventory mode	Disabled Manual Automatic		
£6	Services	~	User group for database down message	Zabbix_Super_Admins ×	Select	
≣	Inventory	~	Log unmatched SNMP traps			
J	Reports	~		Authorization		
			* Login attempts	5		
ٹ	Data collection	~	* Login blocking interval	30s		
\square	Alerts	~		Storage of secrets		
000	Users	~	Vault provider	HashiCorp Vault CyberArk Vault		
ŝ	Administration	^		Security		
	General	>	Validate URI schemes	\checkmark		



Scheduled reports – Frequent problems

- > Google chrome is not installed on same machine where is Zabbix web service
- Firewall is blocking your connection from Zabbix server to port 10053 and from Zabbix web service to your Zabbix fronted
- > SELINUX is blocking your app
- No media is defined for user (minimum is one email media)
- > Testing button gives you an error message: No media is defined for user **Not classified**
- > User permission for dashboard or data
- > Widgets limitations in /usr/share/zabbix/include/defines.inc.php



Dashboard

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Reporting in Zabbix Dashboards

Zabbix Dashboard is your central point 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!



Widgets

- Action log
- Clock (Updated 6.2)
- Data overview
- Discovery status
- > Favorite graphs
- Favorite maps
- > Gauge (Zabbix 7.0)
- > Geomap (Zabbix 6.0)
- > Graph (Updated 6.2)
- Graph (classic)
- Graph prototype
- Host availability
- Item value (Zabbix 6.0+ updated 6.4)
- > Map
- Map navigation tree

- > Map
- Map navigation tree
- > Pie chart (Zabbix 7.0)
- Plain text
- Problem hosts
- Problems
- Problems by severity
- > SLA report
- System information
- > Top hosts (Zabbix 6.0)
- > Top triggers (Zabbix 7.0)
- Trigger overview
- > URL
- Web monitoring
- Deprecated widgets: Data overview





Dashboard with time selector





PDF report from dashboard



Third party solutions

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Third party solutions

Grafana

https://grafana.com/docs/grafana/latest/dashbo ards/create-reports/

- SQL (used for calculation SLA and price)
- PowerBI (SLA, price, top problems, corelations,...)
- Custom PHP (PDF Reports not supported) <u>https://www.zabbix.com/forum/zabbix-</u> <u>cookbook/25368-zabbix-dynamic-pdf-report-</u> <u>generation</u>
- Other solutions on GitHub <u>https://github.com/jieshiu/ZabbixReport</u> <u>https://github.com/gabrieldss808/Zabbix-Pdf-Screen-Report</u>





Demo

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Questions?



Contact us:

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