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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

1

Reporting overview

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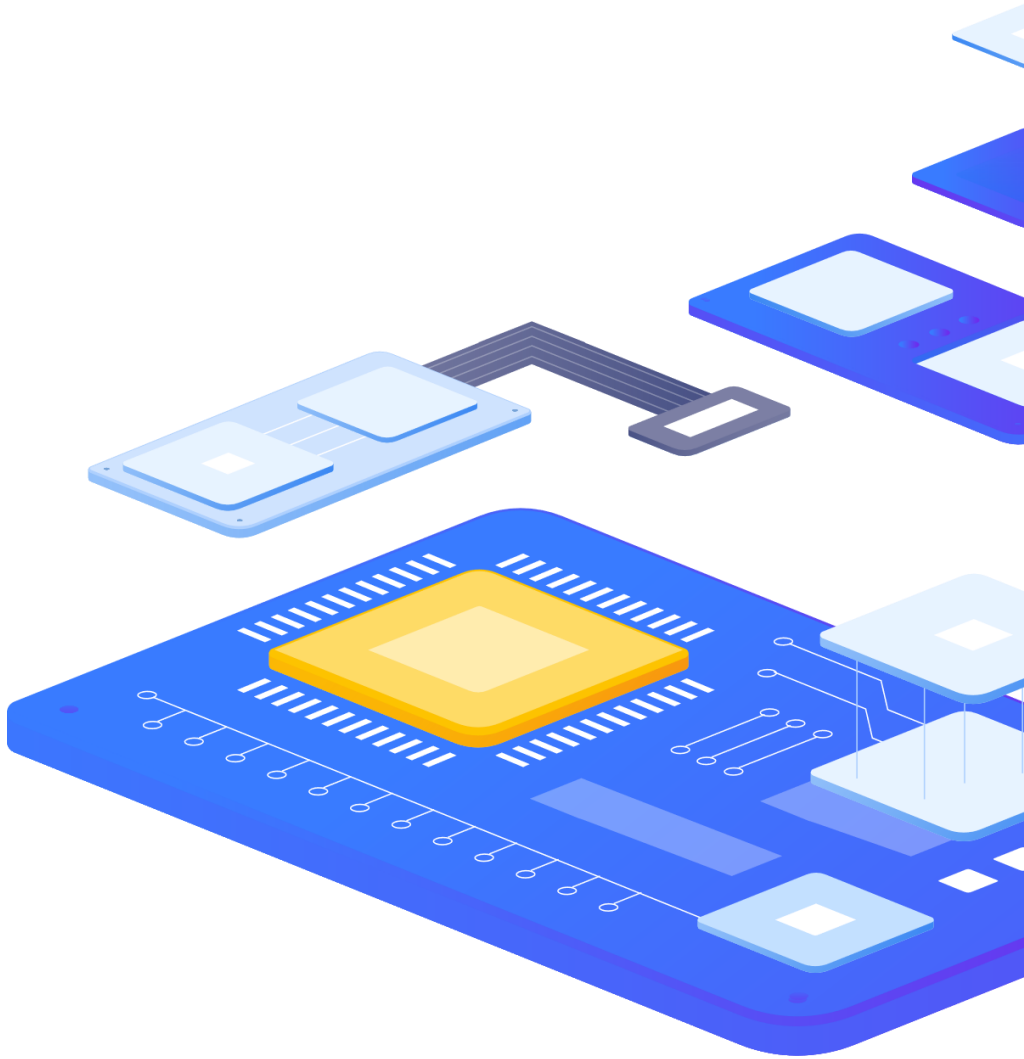
Reporting overview

- The Reports menu features several sections that contain a variety of predefined and user-customizable 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.



2

Menu - Reports

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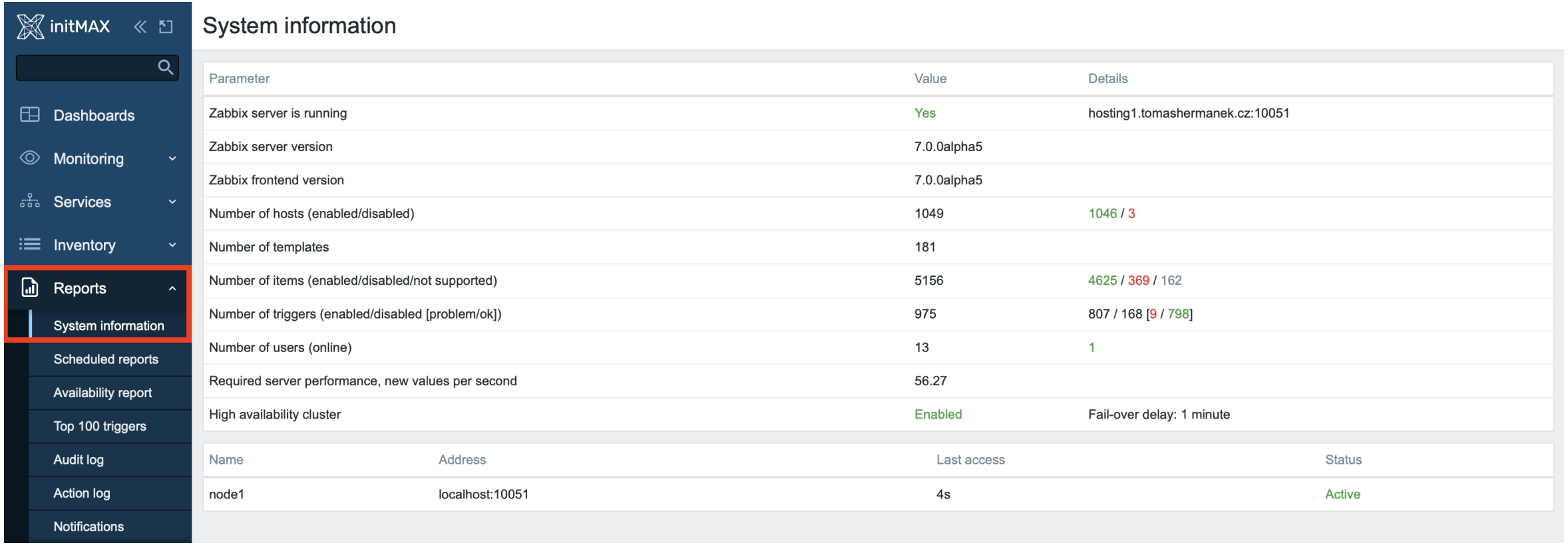
Menu – Reports - System information

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



Parameter	Value	Details
Zabbix server is running	Yes	hosting1.tomashermanek.cz:10051
Zabbix server version	7.0.0alpha5	
Zabbix frontend version	7.0.0alpha5	
Number of hosts (enabled/disabled)	1049	1046 / 3
Number of templates	181	
Number of items (enabled/disabled/not supported)	5156	4625 / 369 / 162
Number of triggers (enabled/disabled [problem/ok])	975	807 / 168 [9 / 798]
Number of users (online)	13	1
Required server performance, new values per second	56.27	
High availability cluster	Enabled	Fail-over delay: 1 minute

Name	Address	Last access	Status
node1	localhost:10051	4s	Active

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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.

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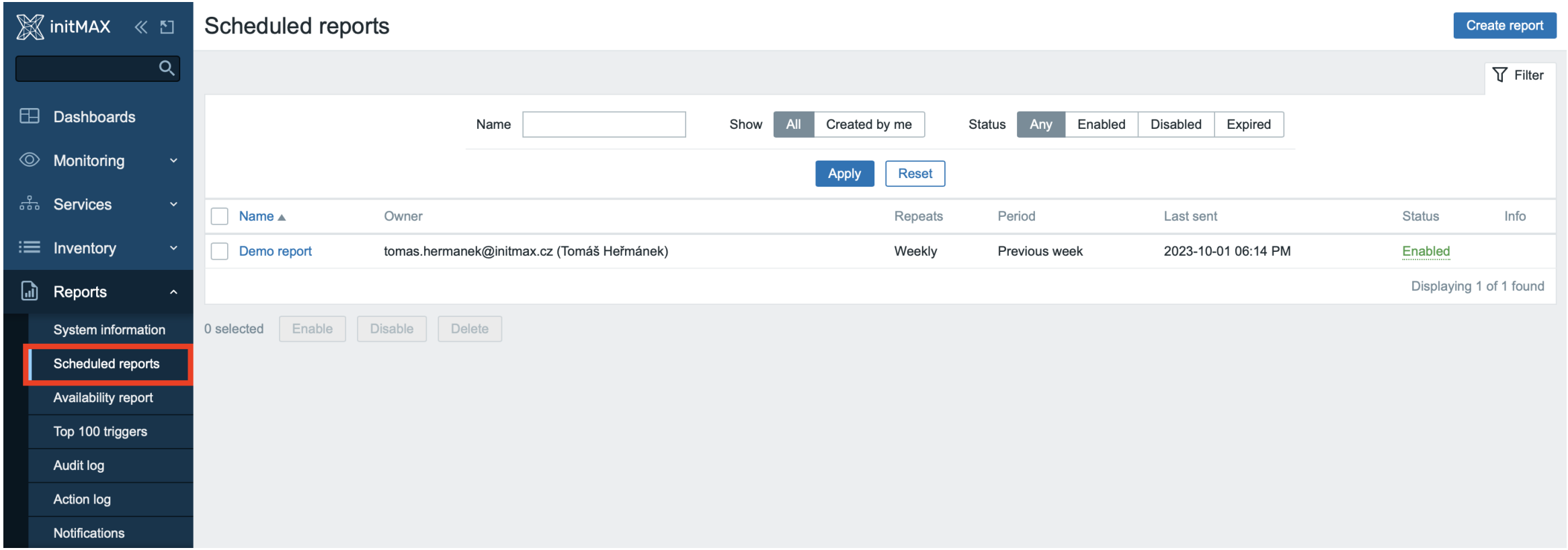
Menu – Reports - Scheduled reports

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



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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**

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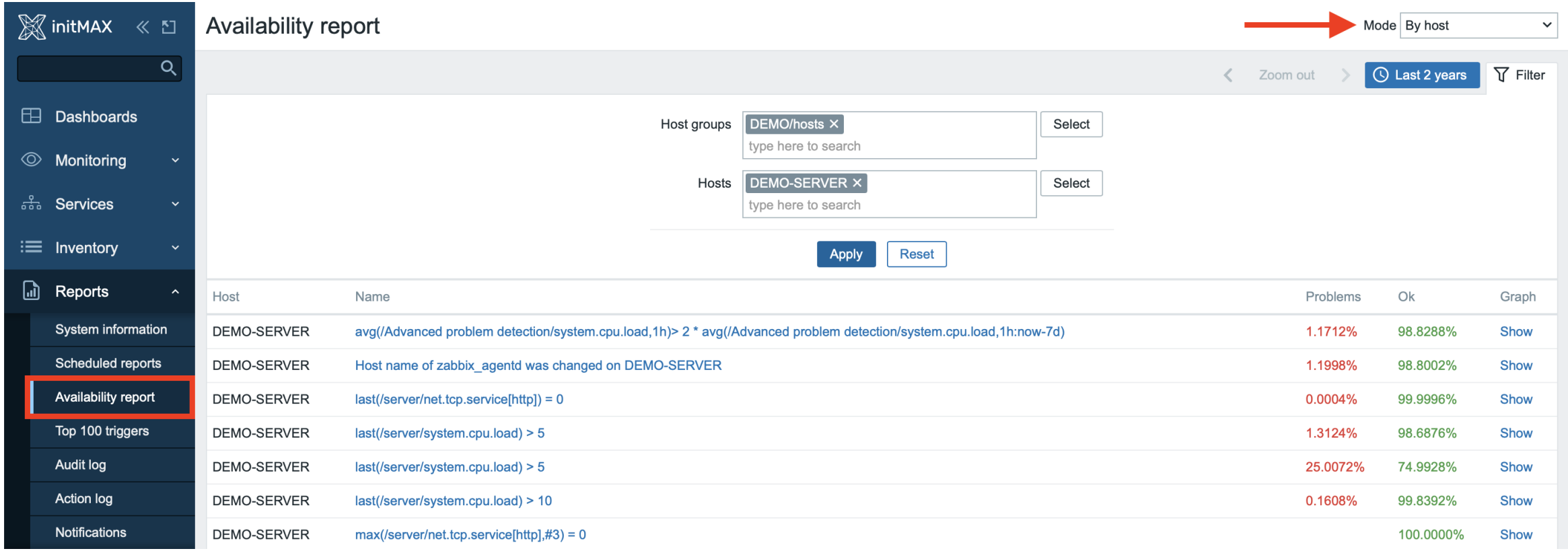
Menu – Reports - Availability report

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



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Menu – Reports - Availability report

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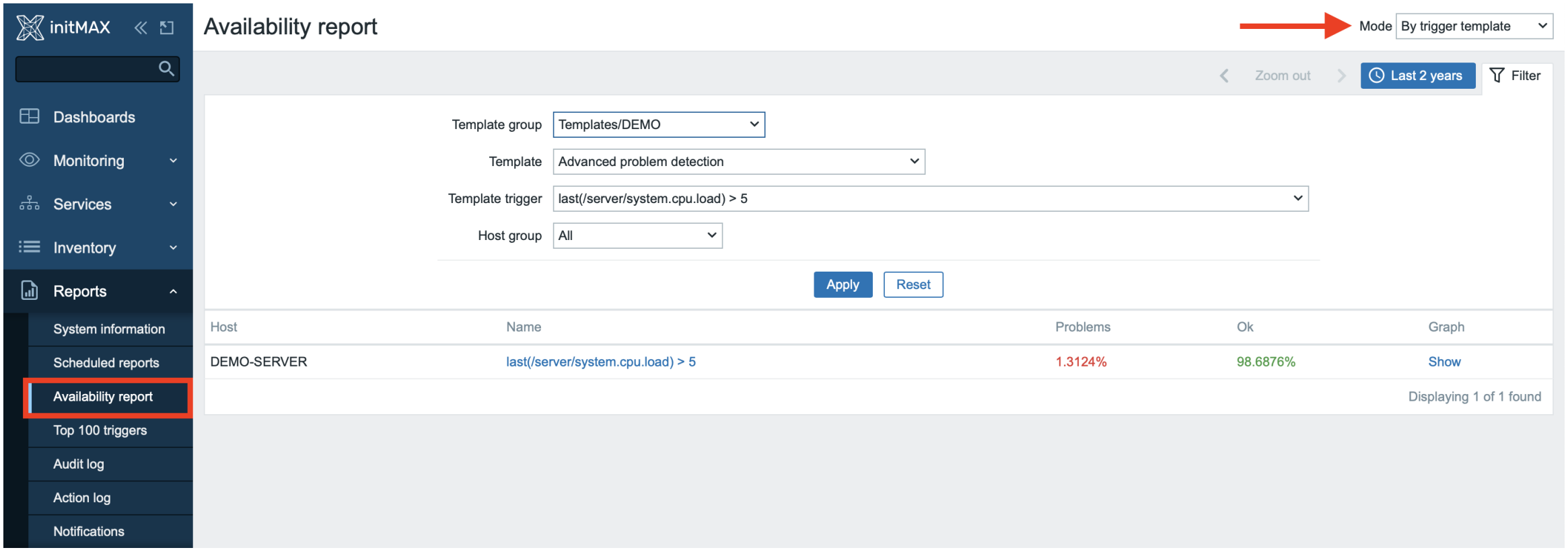

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Menu – Reports - Availability report

- 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.**

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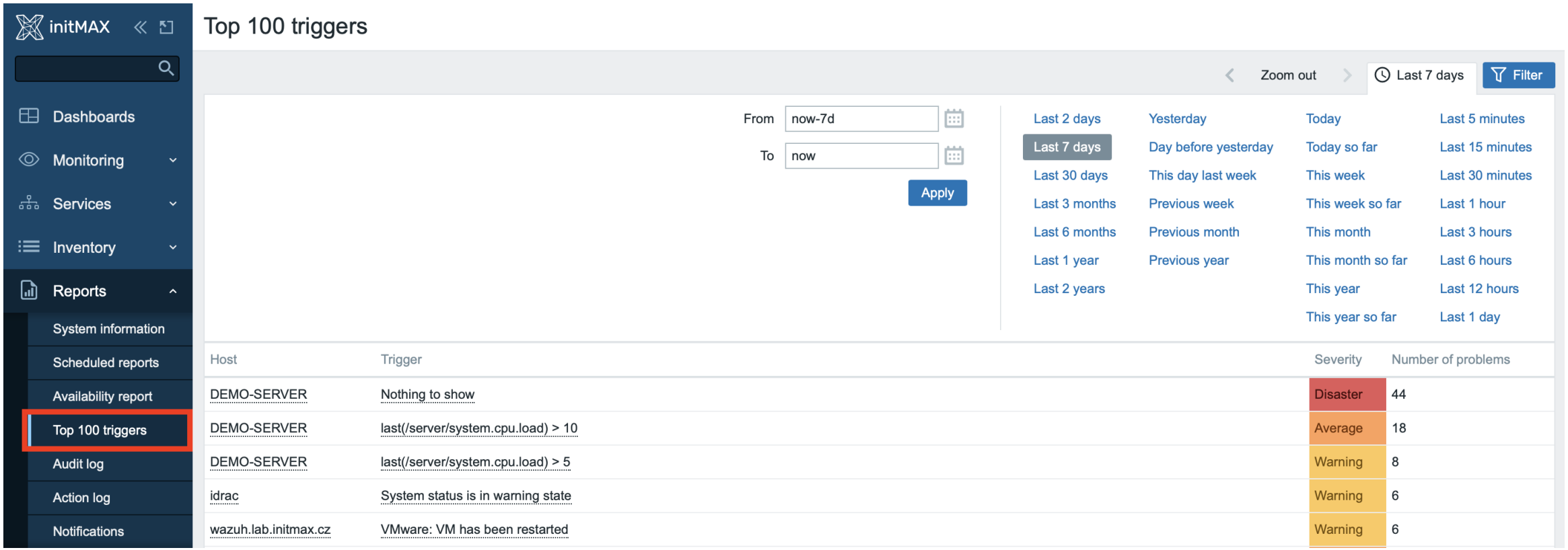
Menu – Reports - Triggers top 100

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



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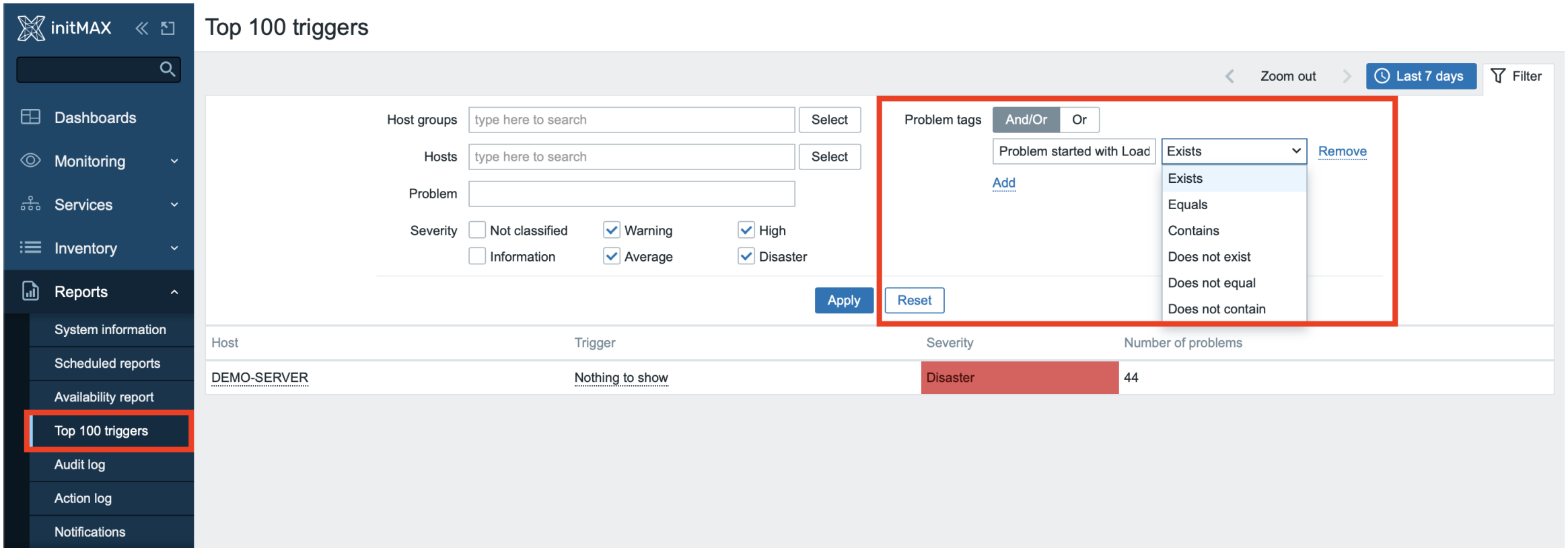
Menu – Reports - Triggers top 100

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



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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

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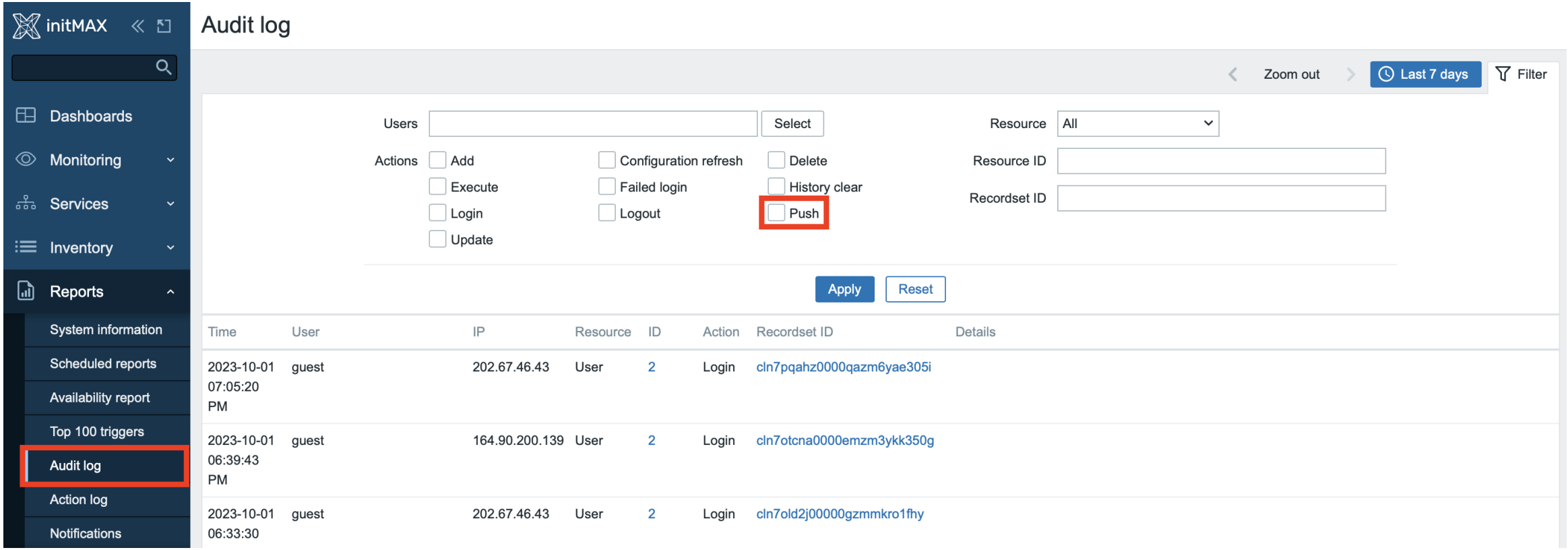
Menu – Reports - Audit log

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



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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.

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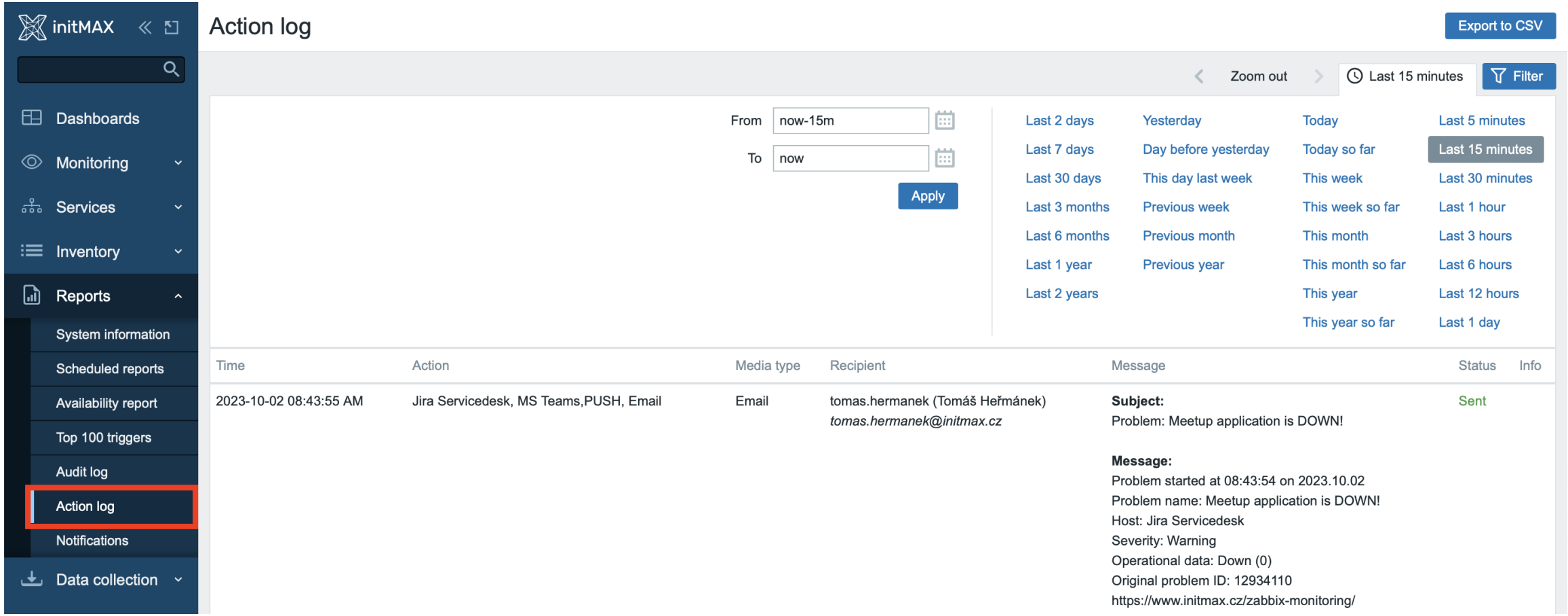
Menu – Reports - Action log

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



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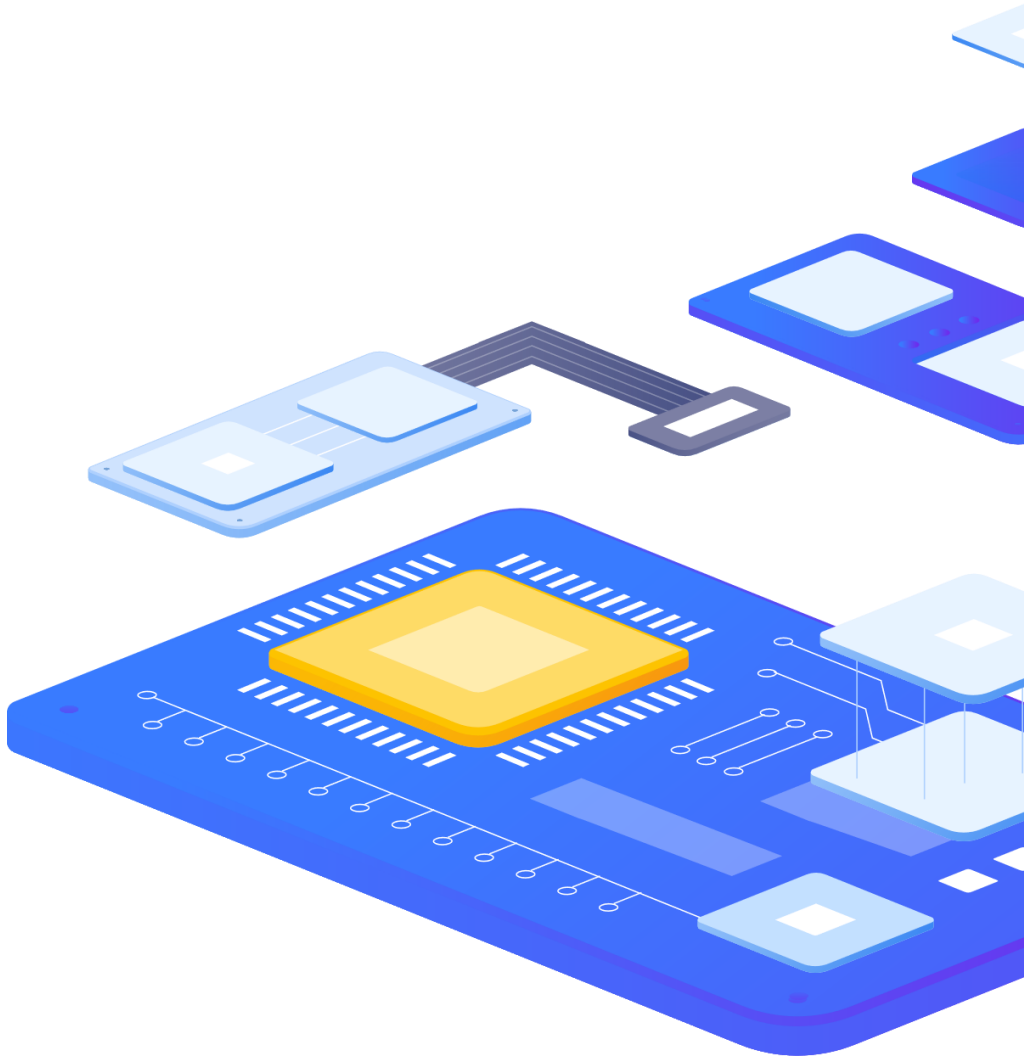
Menu – Reports - Action log

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



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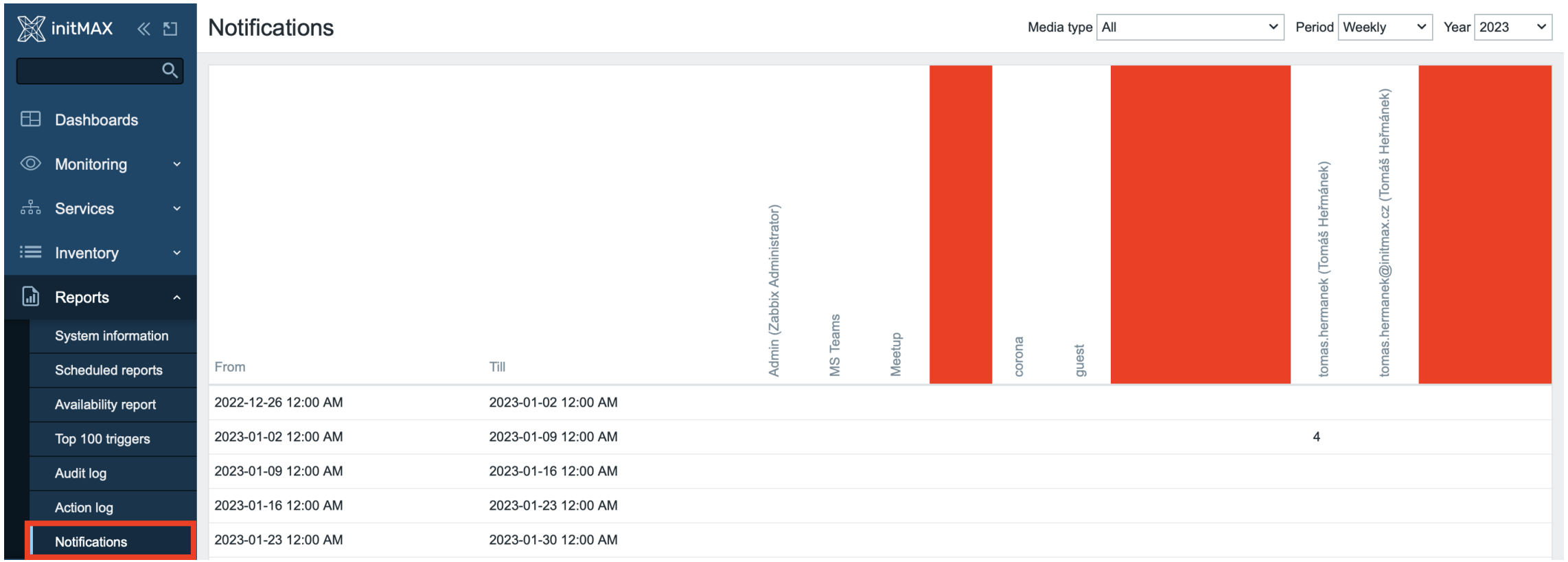
Menu – Reports - Notifications

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



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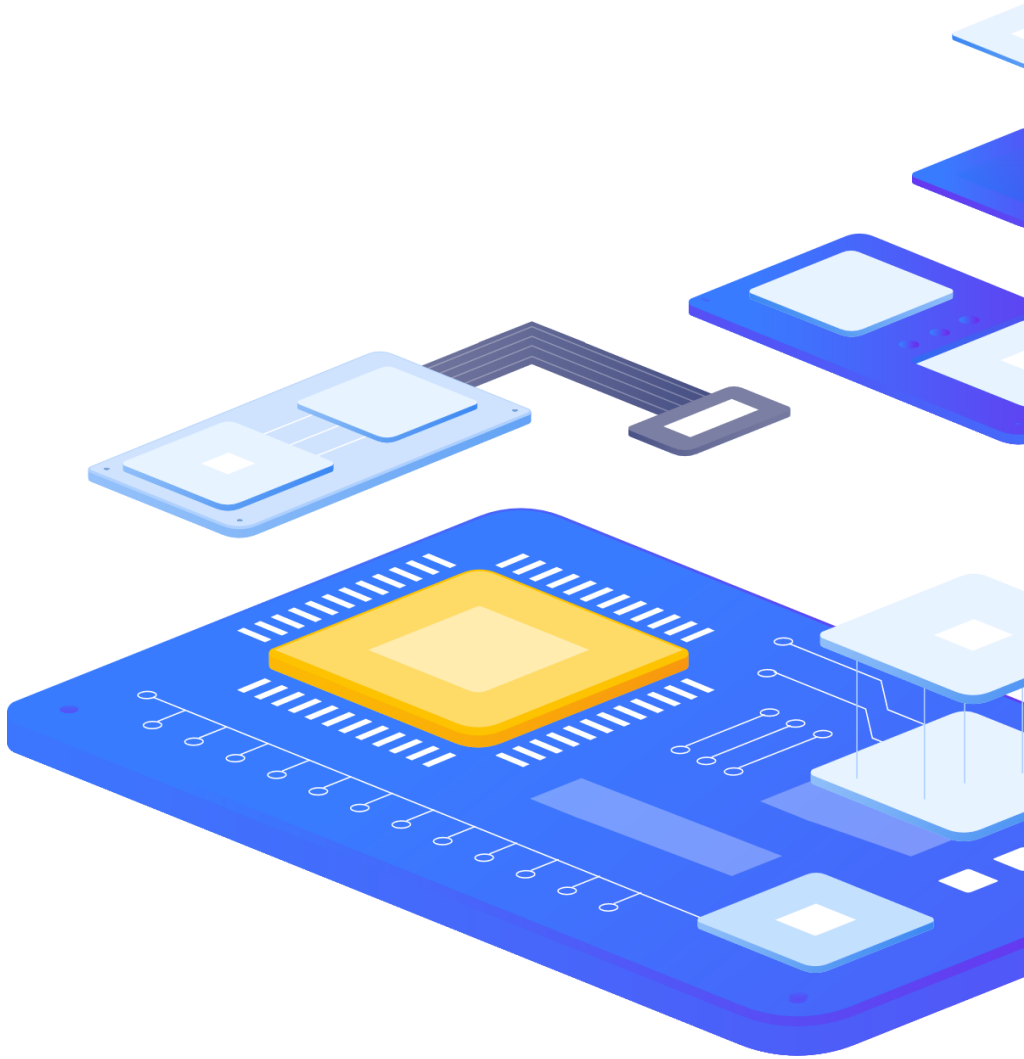
Menu – Reports - Notifications

- 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.



3

Scheduled reports

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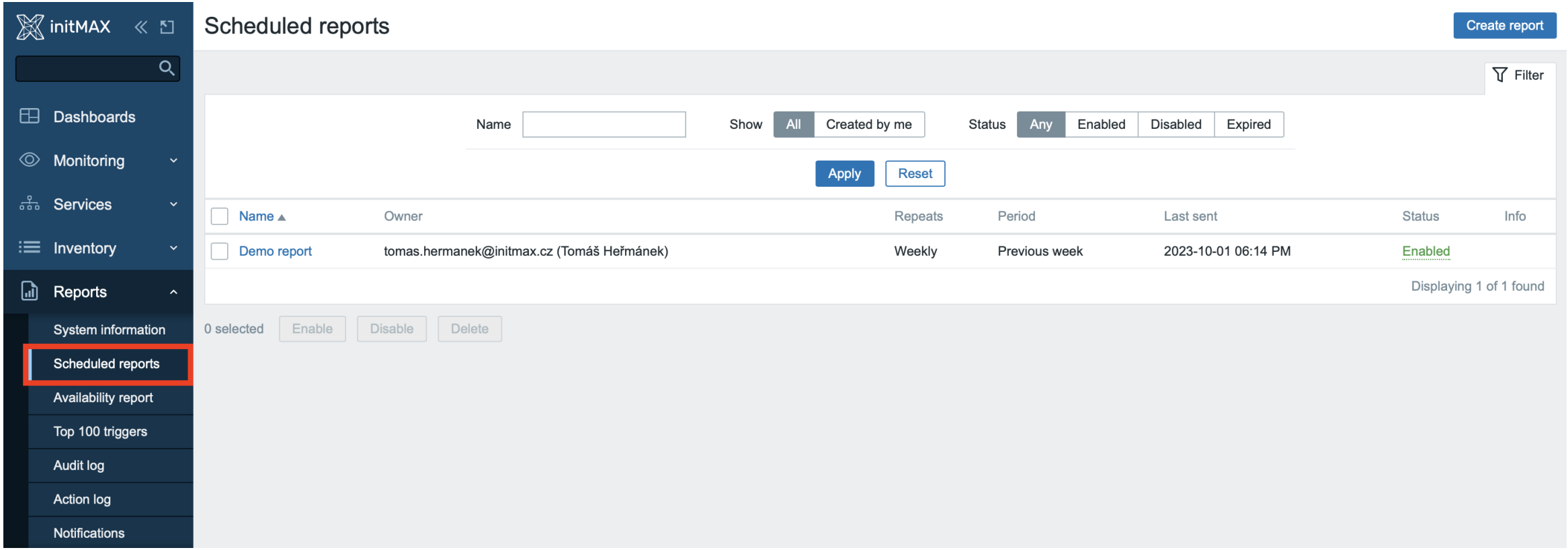
Scheduled reports

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



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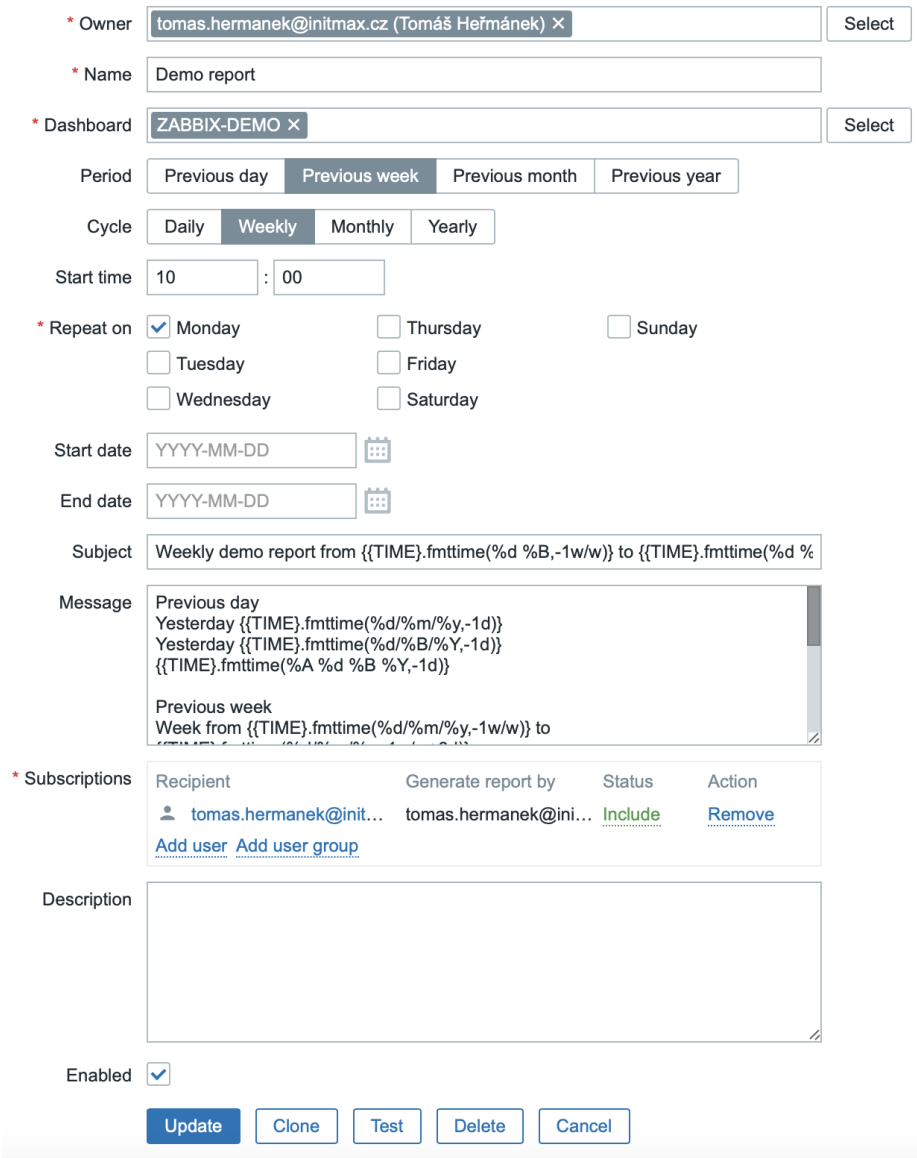
Scheduled reports

- 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)



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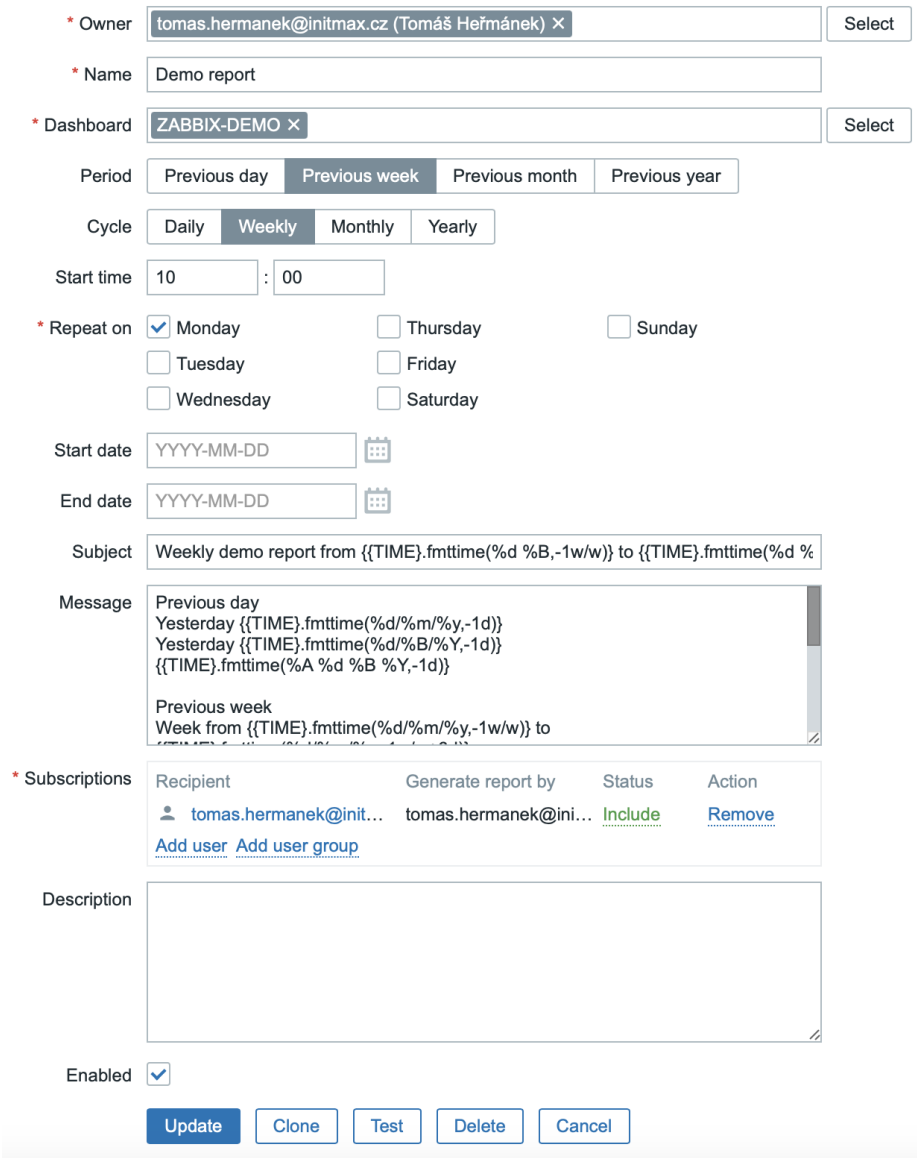
Scheduled reports

- 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



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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

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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

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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)

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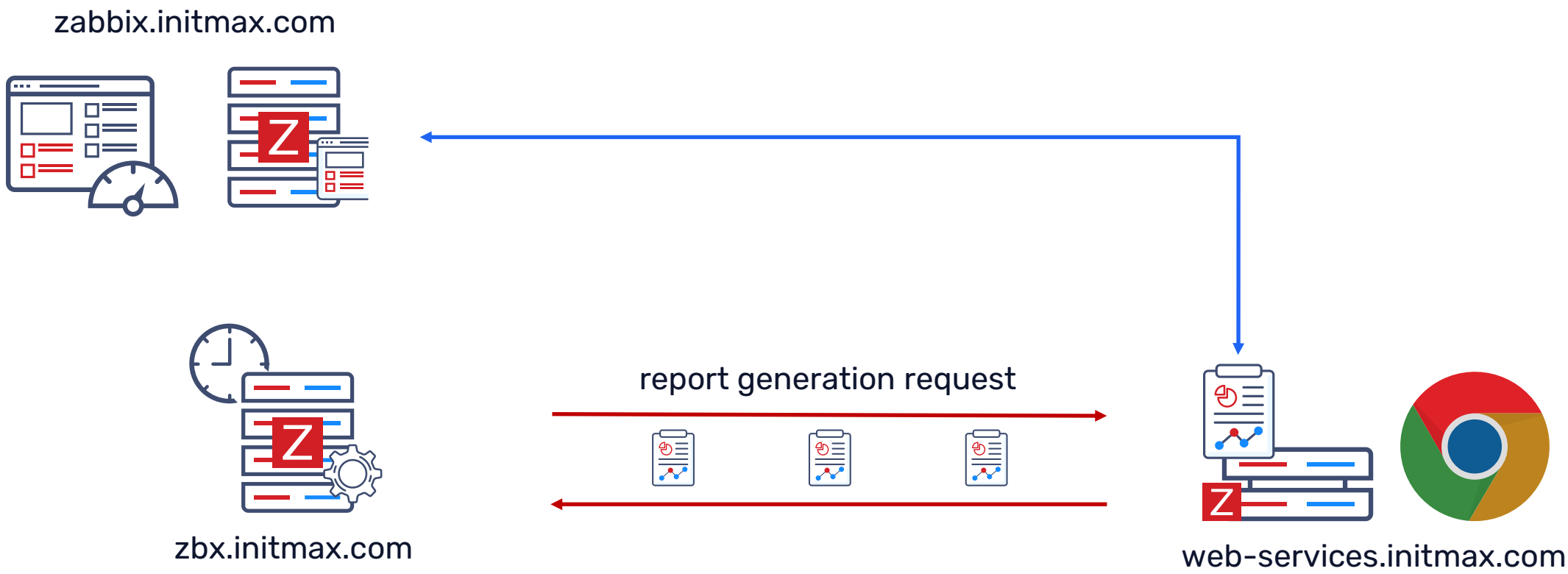
Scheduled reports – Architecture




```
StartReportWriters=3
WebServiceURL=http://web-services.initmax.com:10053/report
```

```
AllowedIP=zbx.initmax.com
ListenPort=10053
```

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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
```

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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.

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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
```

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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
```

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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
```

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Scheduled reports – Installation

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

```
# systemctl restart zabbix-server.service
```

```
# systemctl enable zabbix-web-service.service --now
```

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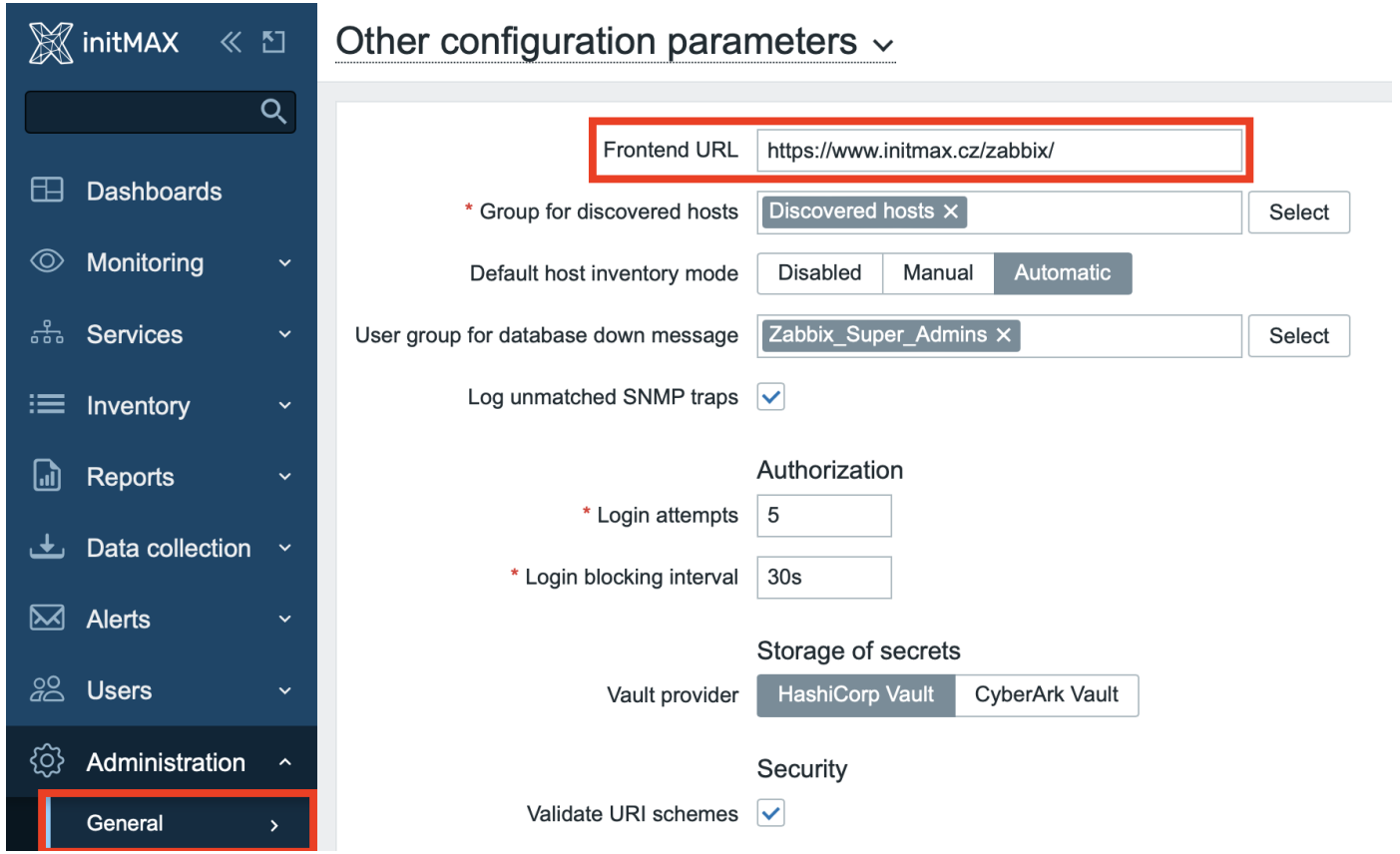
Scheduled reports – Installation

- 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)



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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**

4

Dashboard

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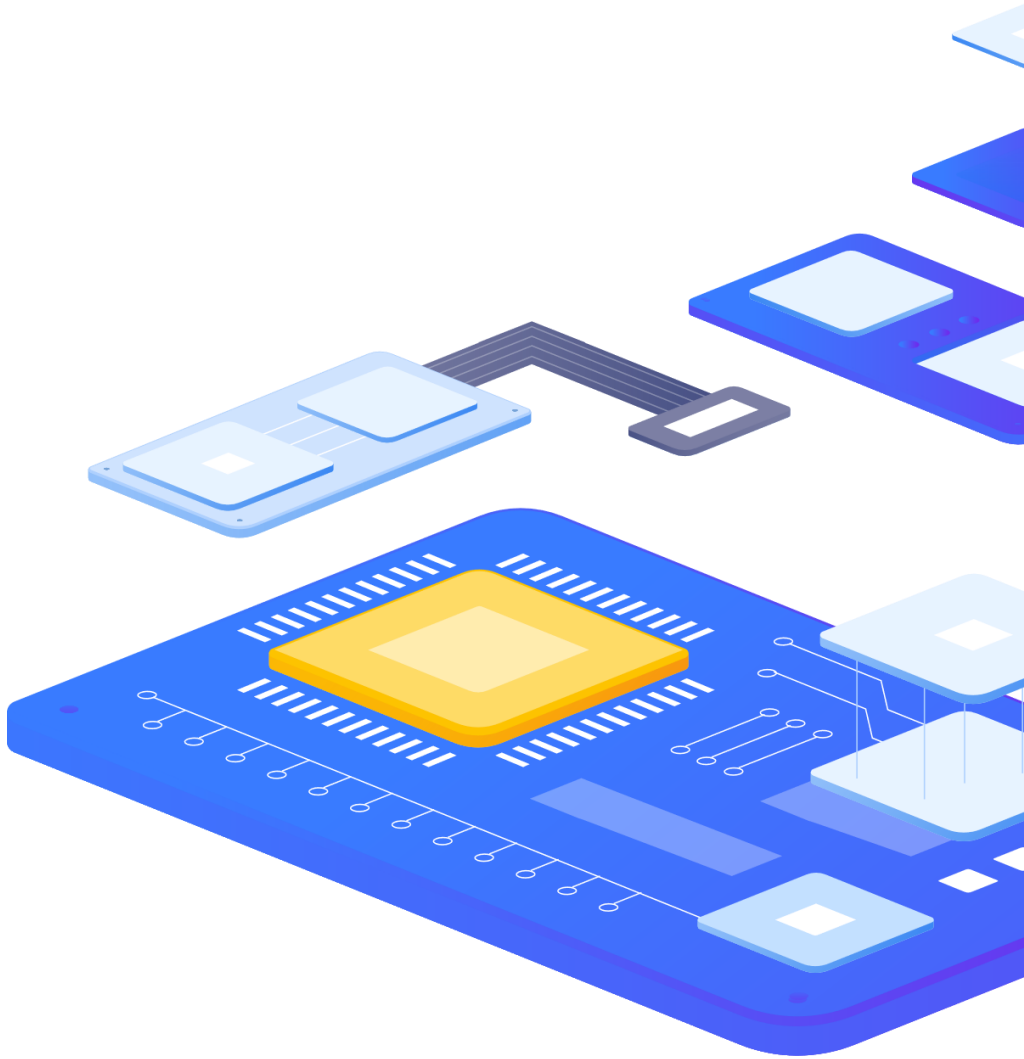
Dashboards

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!



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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**

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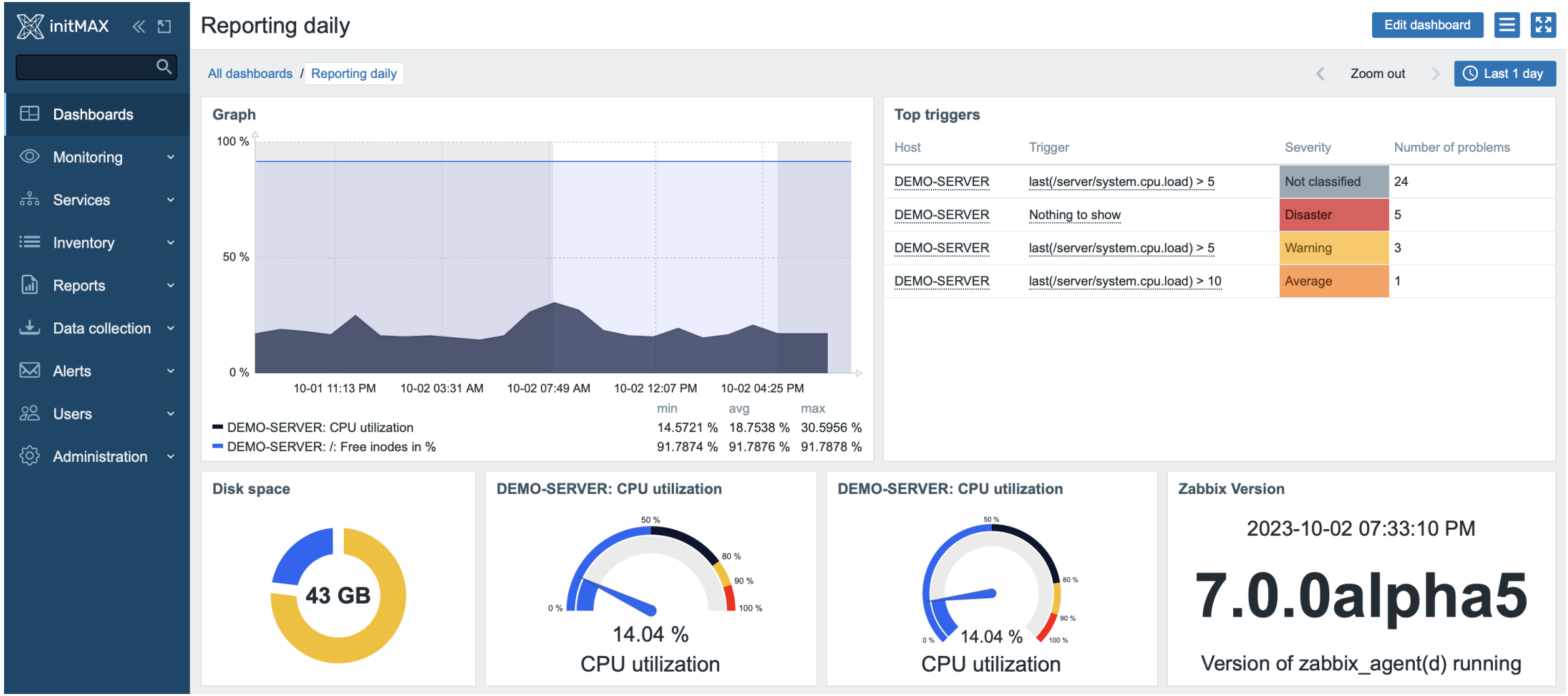
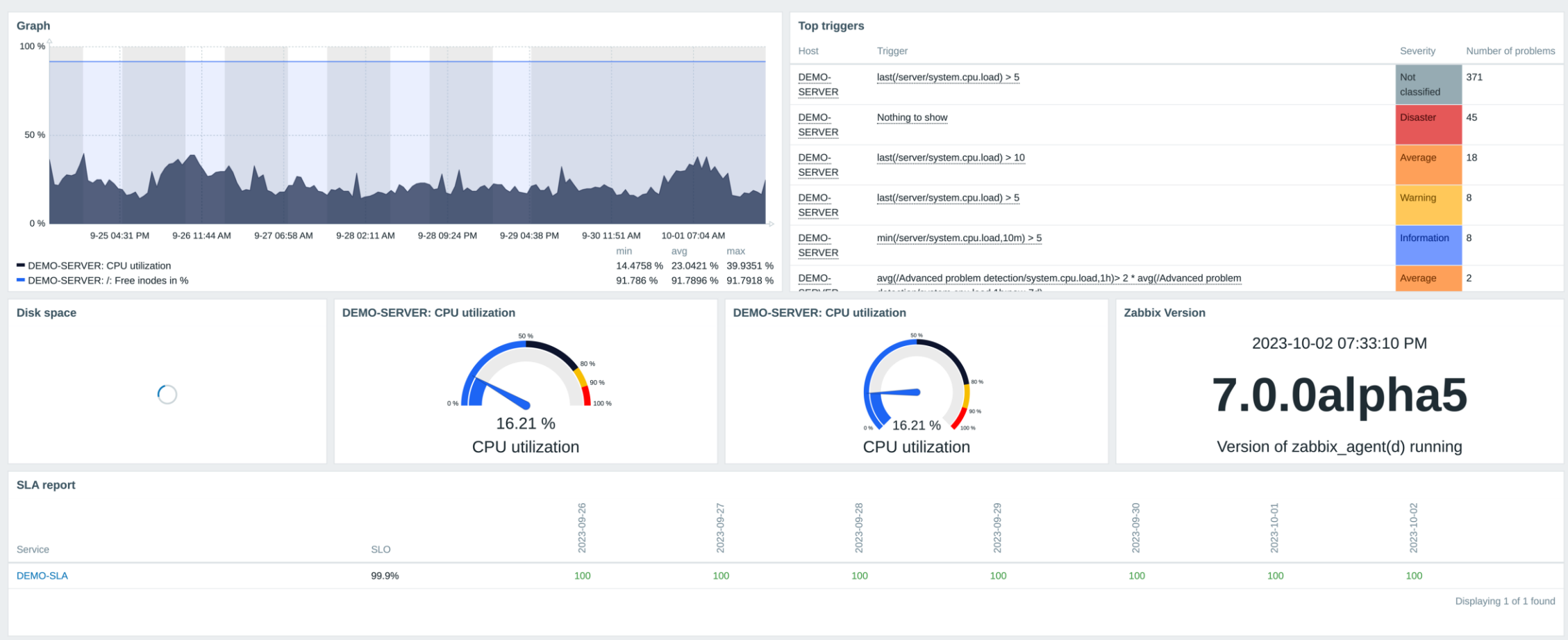
Dashboard with time selector



Reporting in Zabbix

PDF report from dashboard



Graph

100 %
50 %
0 %
9-25 04:31 PM
9-26 11:44 AM
9-27 06:58 AM
9-28 02:11 AM
9-28 09:24 PM
9-29 04:38 PM
9-30 11:51 AM
10-01 07:04 AM

	min	avg	max
DEMO-SERVER: CPU utilization	14.4758 %	23.0421 %	39.9351 %
DEMO-SERVER: /: Free inodes in %	91.786 %	91.7896 %	91.7918 %

Top triggers

Host	Trigger	Severity	Number of problems
DEMO-SERVER	last(/server/system.cpu.load) > 5	Not classified	371
DEMO-SERVER	Nothing to show	Disaster	45
DEMO-SERVER	last(/server/system.cpu.load) > 10	Average	18
DEMO-SERVER	last(/server/system.cpu.load) > 5	Warning	8
DEMO-SERVER	min(/server/system.cpu.load,10m) > 5	Information	8
DEMO-SERVER	avg(/Advanced problem detection/system.cpu.load,1h)> 2 * avg(/Advanced problem	Average	2

Disk space

DEMO-SERVER: CPU utilization

16.21 %
CPU utilization

DEMO-SERVER: CPU utilization

16.21 %
CPU utilization

Zabbix Version

2023-10-02 07:33:10 PM

7.0.0alpha5

Version of zabbix_agent(d) running

SLA report

Service	SLO	2023-09-26	2023-09-27	2023-09-28	2023-09-29	2023-09-30	2023-10-01	2023-10-02
DEMO-SLA	99.9%	100	100	100	100	100	100	100

Displaying 1 of 1 found

5

Third party solutions

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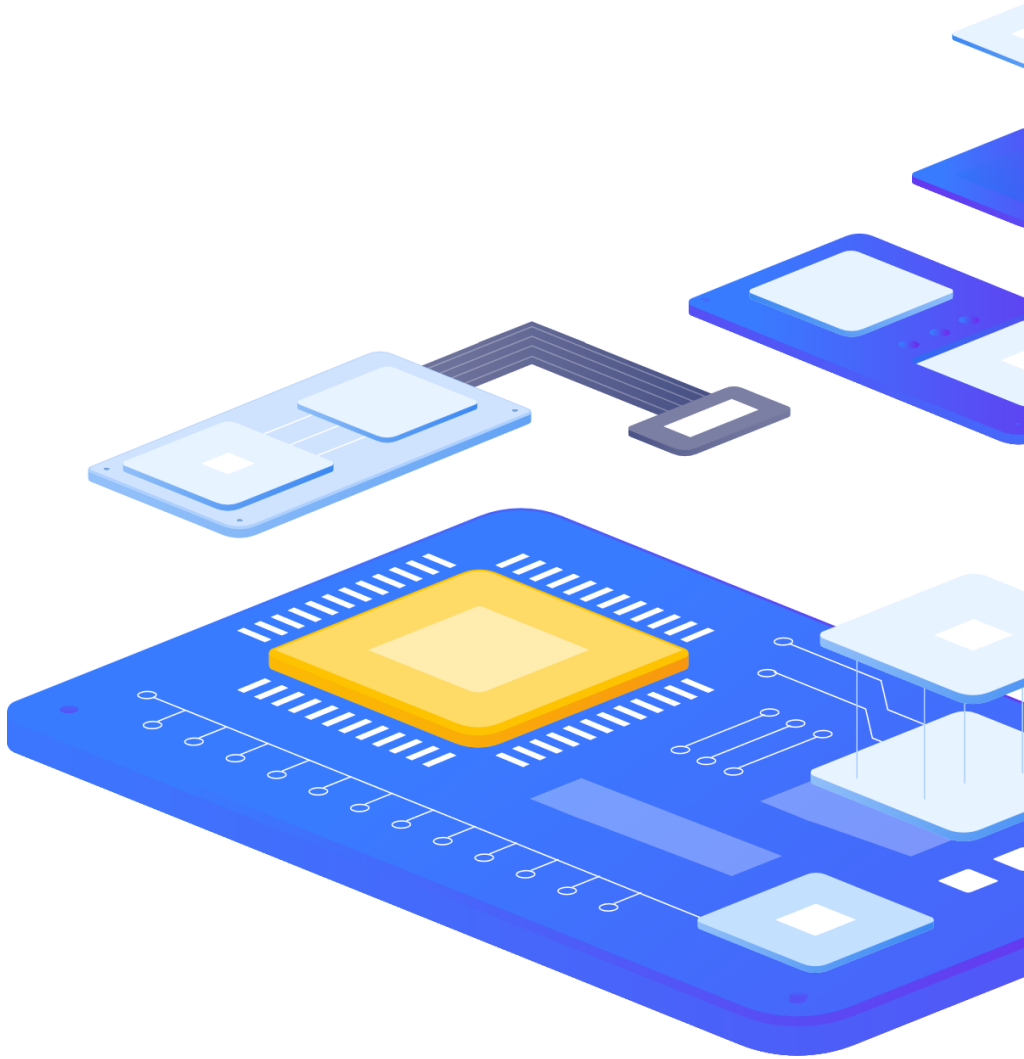
Third party solutions

- Grafana
  https://grafana.com/docs/grafana/latest/dashboards/create-reports/
- SQL (used for calculation SLA and price)
- PowerBI (SLA, price, top problems, corelations,…)
- Custom PHP (PDF Reports – not supported)
  https://www.zabbix.com/forum/zabbix-cookbook/25368-zabbix-dynamic-pdf-report-generation
- Other solutions on GitHub
  https://github.com/jieshiu/ZabbixReport
  https://github.com/gabrieldss808/Zabbix-Pdf-Screen-Report



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Demo

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Questions?

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