initMAX

Webinar

Zabbix System Overview

all our microphones are muted

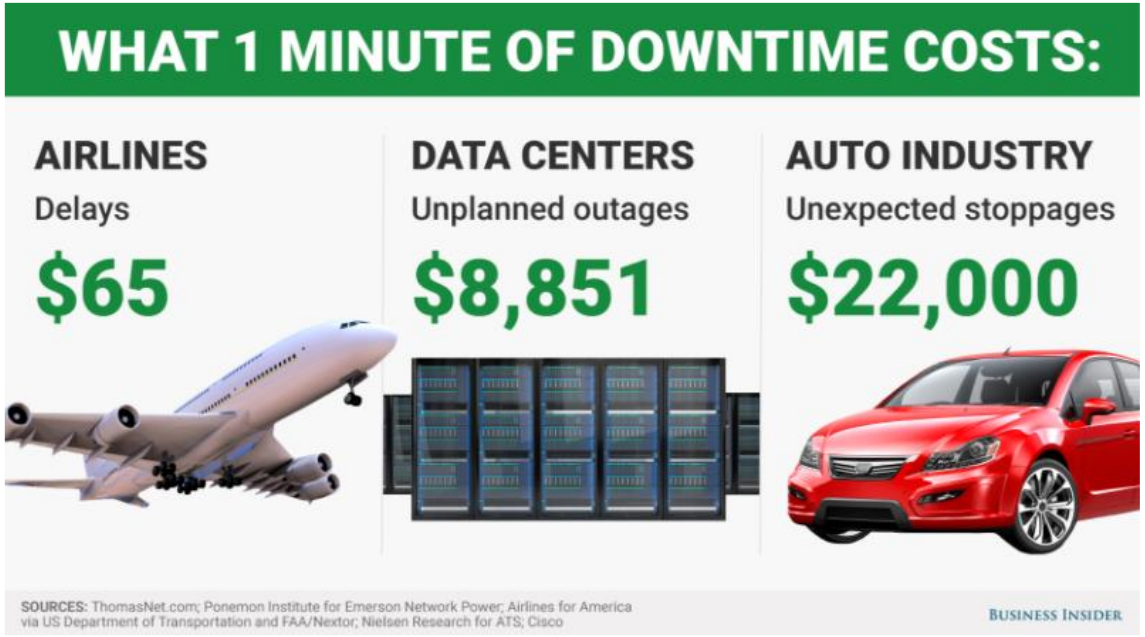
ask your questions in Q&A, not in the Chat

use Chat for discussion, networking or applause

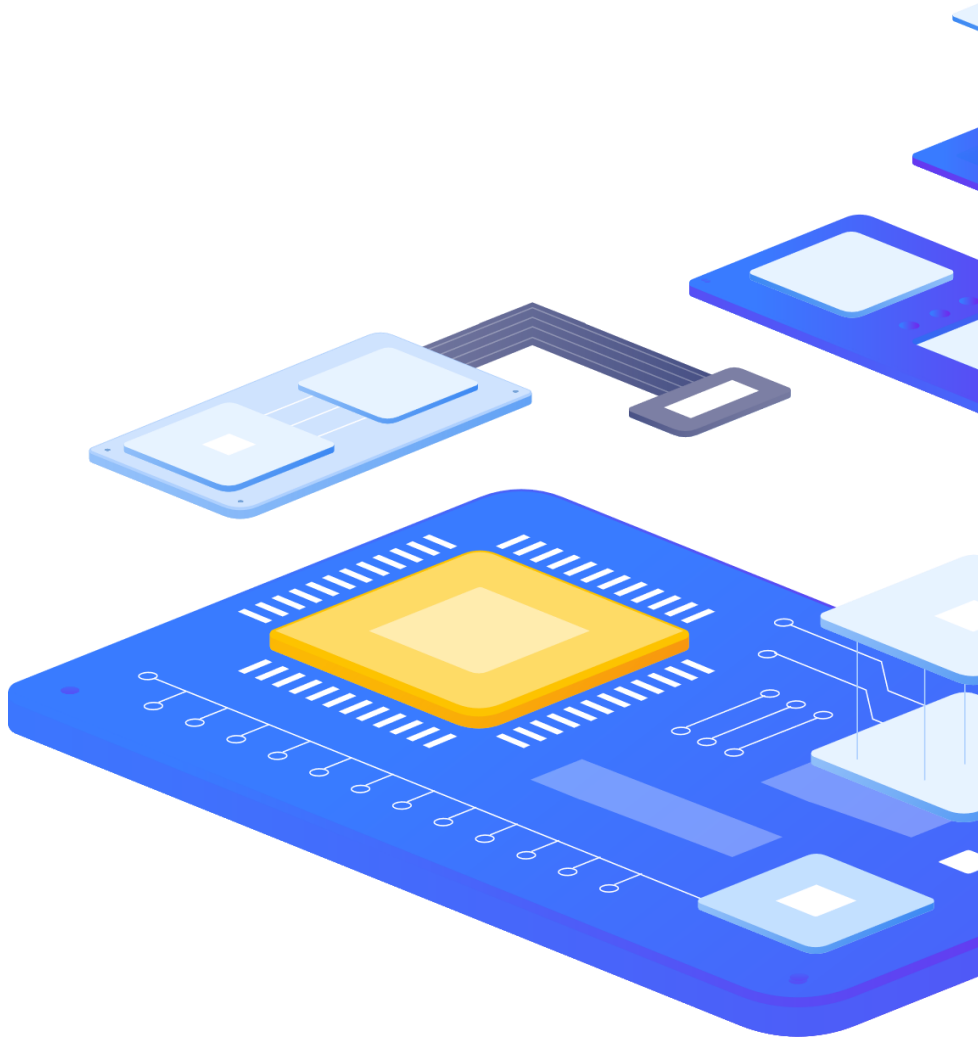
initMAX

System Overview

Why to monitor?



- Prevent downtime.
- Make big IT environments transparent & easy to manage.
- Collect and visualize real-time data, analyze and make trend-predictions.
- Enable better planning & purchasing.



1

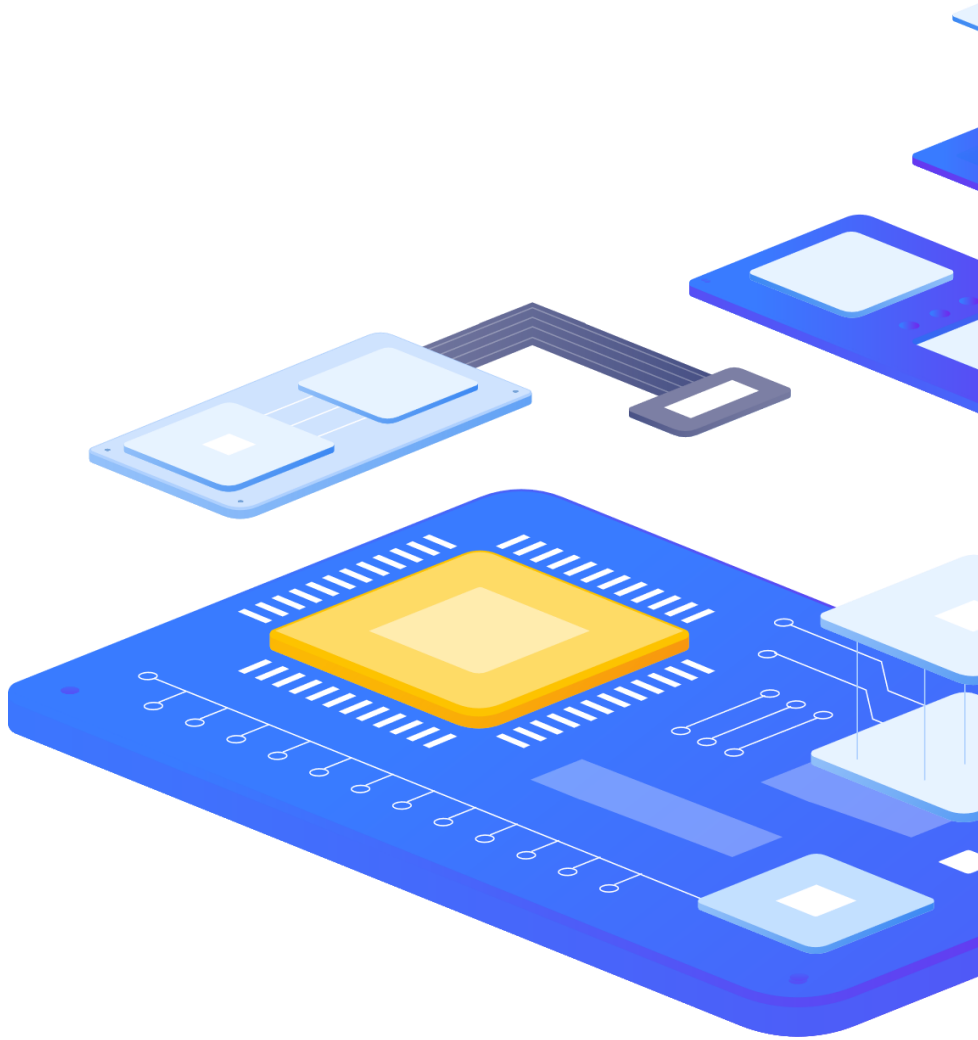
Basics

initMAX

System Overview

20 years of experience

ZABBIX is an enterprise-level monitoring system designed to monitor millions of metrics in real time, collected from tens of thousands of servers, virtual machines, network devices and applications.



System Overview

20 years of experience

- 300 000+
  Instalations worldwide
- 100%
  Opensource
- USER INTERFACE IN 15
  (CZECH and SLOVAK)
- INTEGRATE
  WITH ANY SOLUTION
- GET 24/7
  TECHNICAL SUPPORT
- VISUALIZE
  FOR BETTER ANALYSIS
- MONITOR
  OVER 100 000 DEVICES
- COLLECT
  OVER 10 000 000 METRICS
- ENCRYPT CONNECTIONS
  BETWEEN ZABBIX COMPONENTS

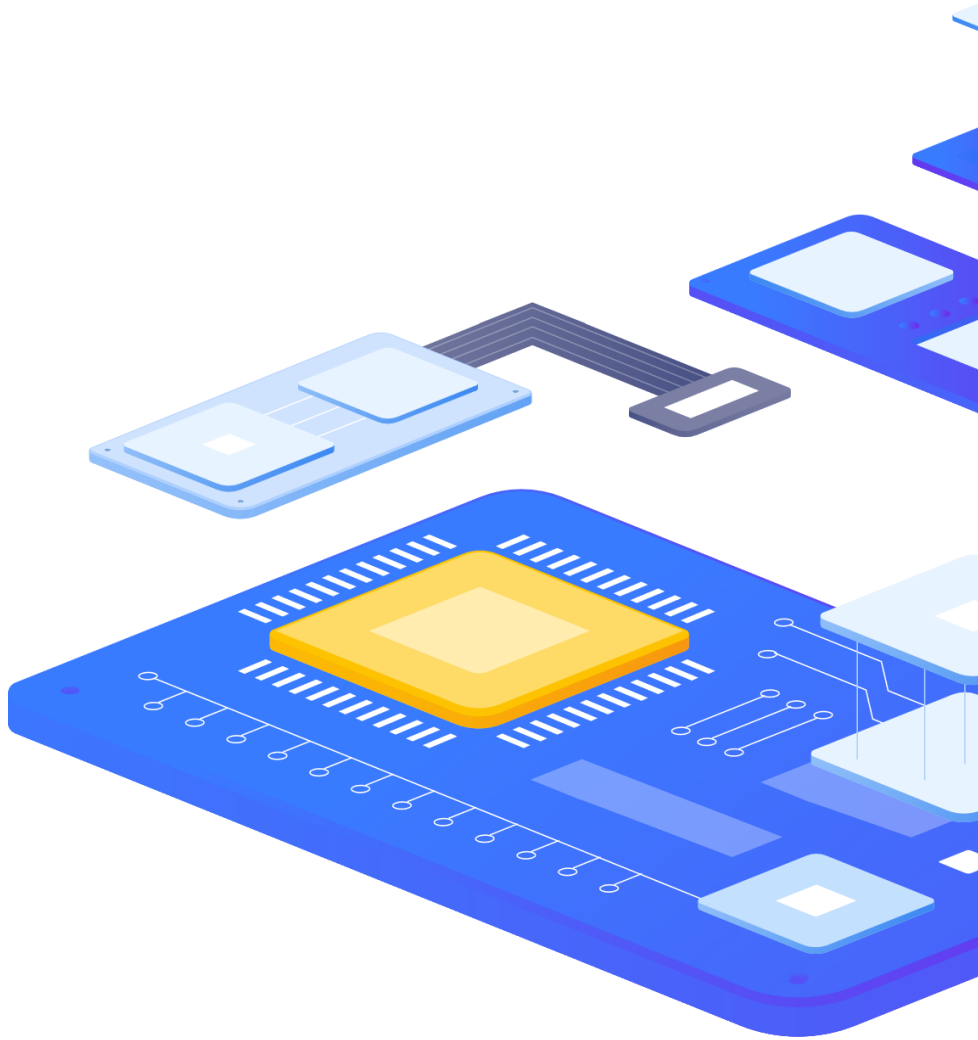
initMAX

System Overview

Trusted by

54 companies from Fortune 500 list

500



initMAX

Zabbix customers


System Overview

Basic architecture

Host

Anything you wish to monitor:

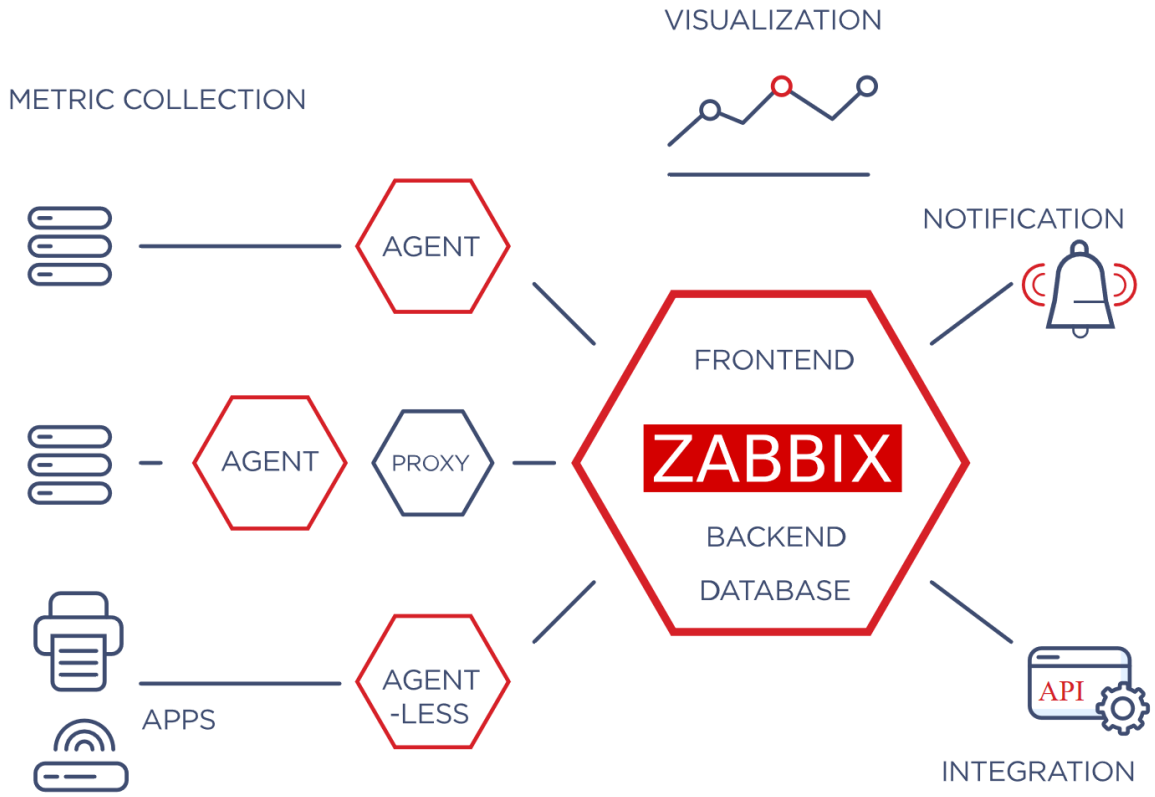
- Server
- Switch
- UPS
- Application
- Database
- Website

Agent

Monitoring of devices, resources and applications.

Proxy

Monitoring of distributed locations.



System Overview

Basic architecture

Server

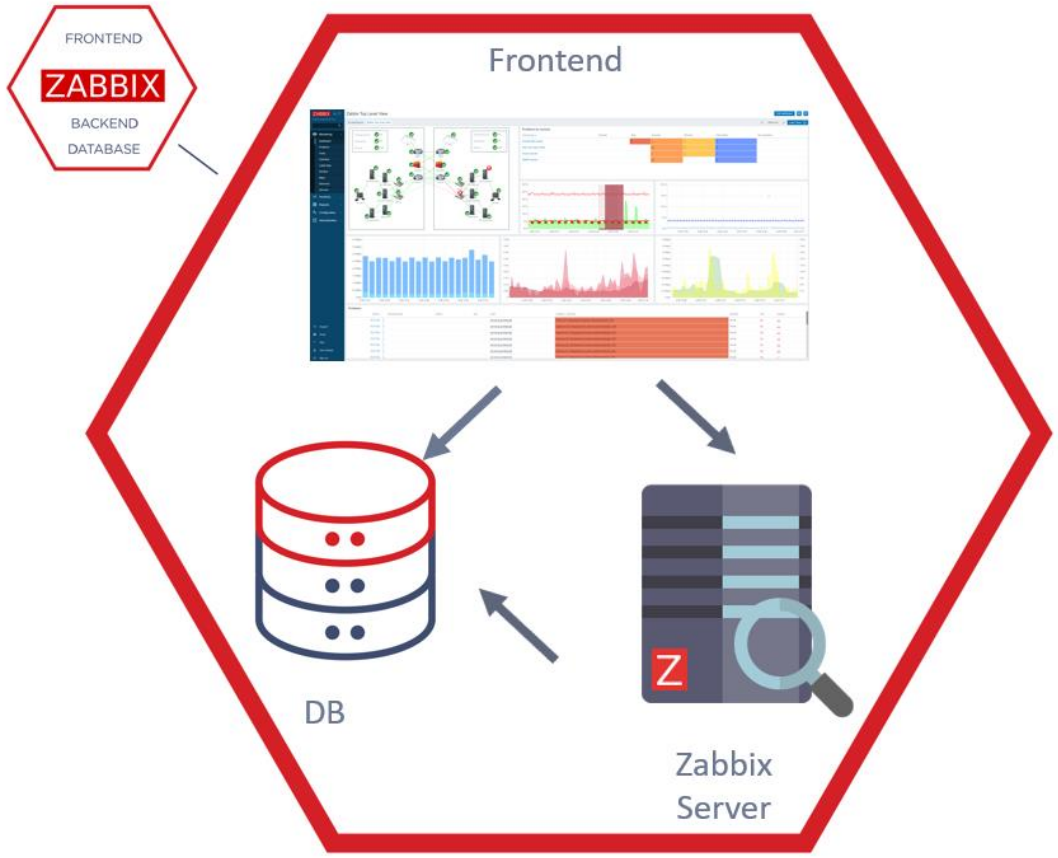
- Data collection
- Calculating Triggers
- Creating Events
- Notification

Frontend

- Visualization
- Configuration management

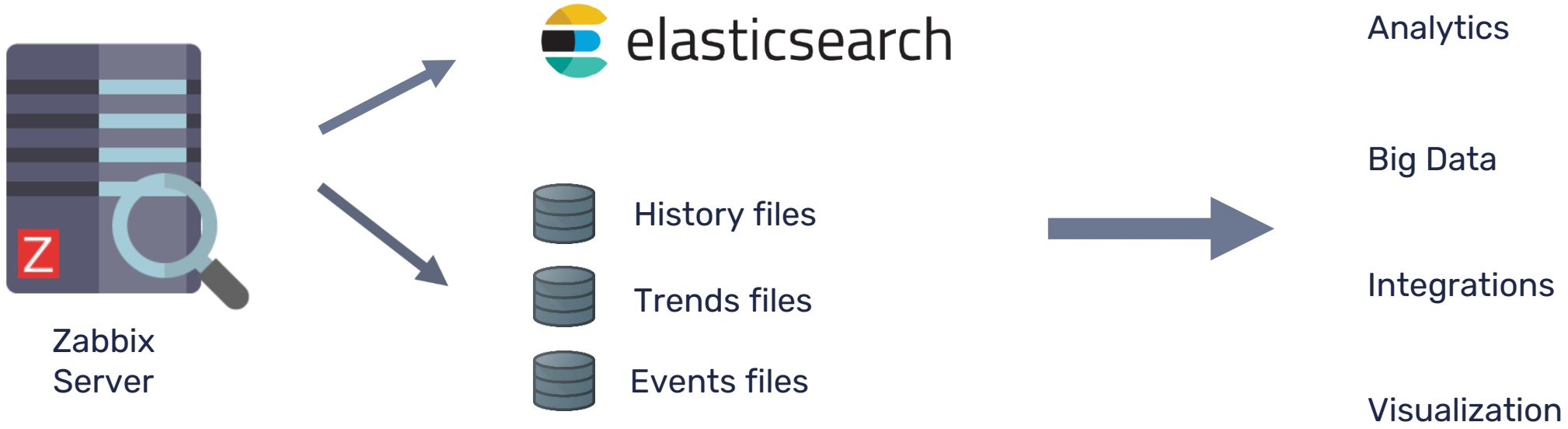
Database

- Data storage



initMAX

Basic architecture



initMAX

Zabbix components

Host - the device you wish to monitor.

Item - defines a metric which you would like to monitor:

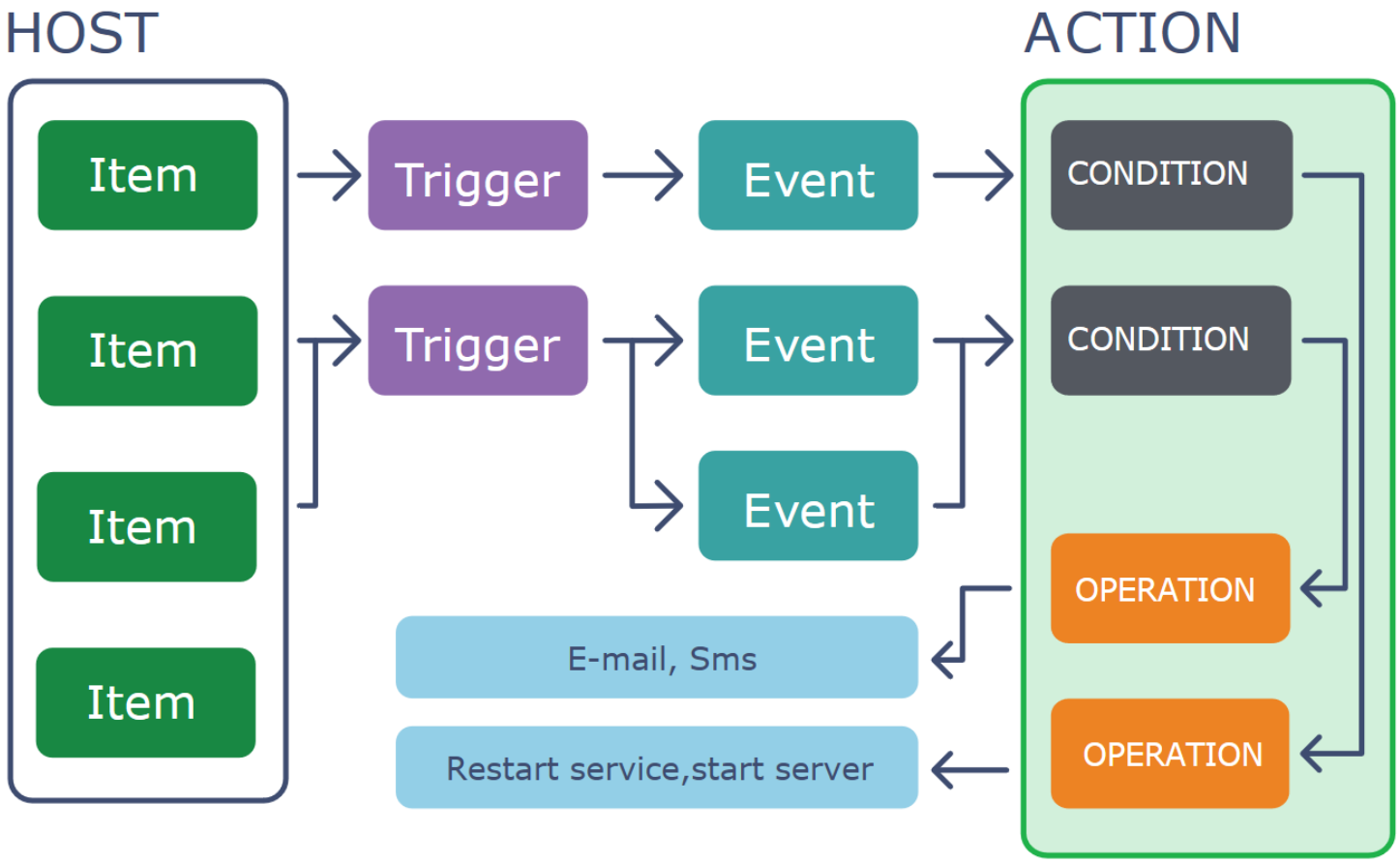
- DB status
- CPU utilization
- Temperature in a server room
- Number of users online for an application, etc.

Trigger – a problem definition.

Event - a single occurrence of something that deserves attention.

Problem - a trigger that is in “Problem” state.

Action - a predefined means of reacting to an event.



initMAX

System Overview

What to monitor?
Solutions for different industries, application areas and use cases

Access control: monitor changes in room temperature, use of access cards, etc.

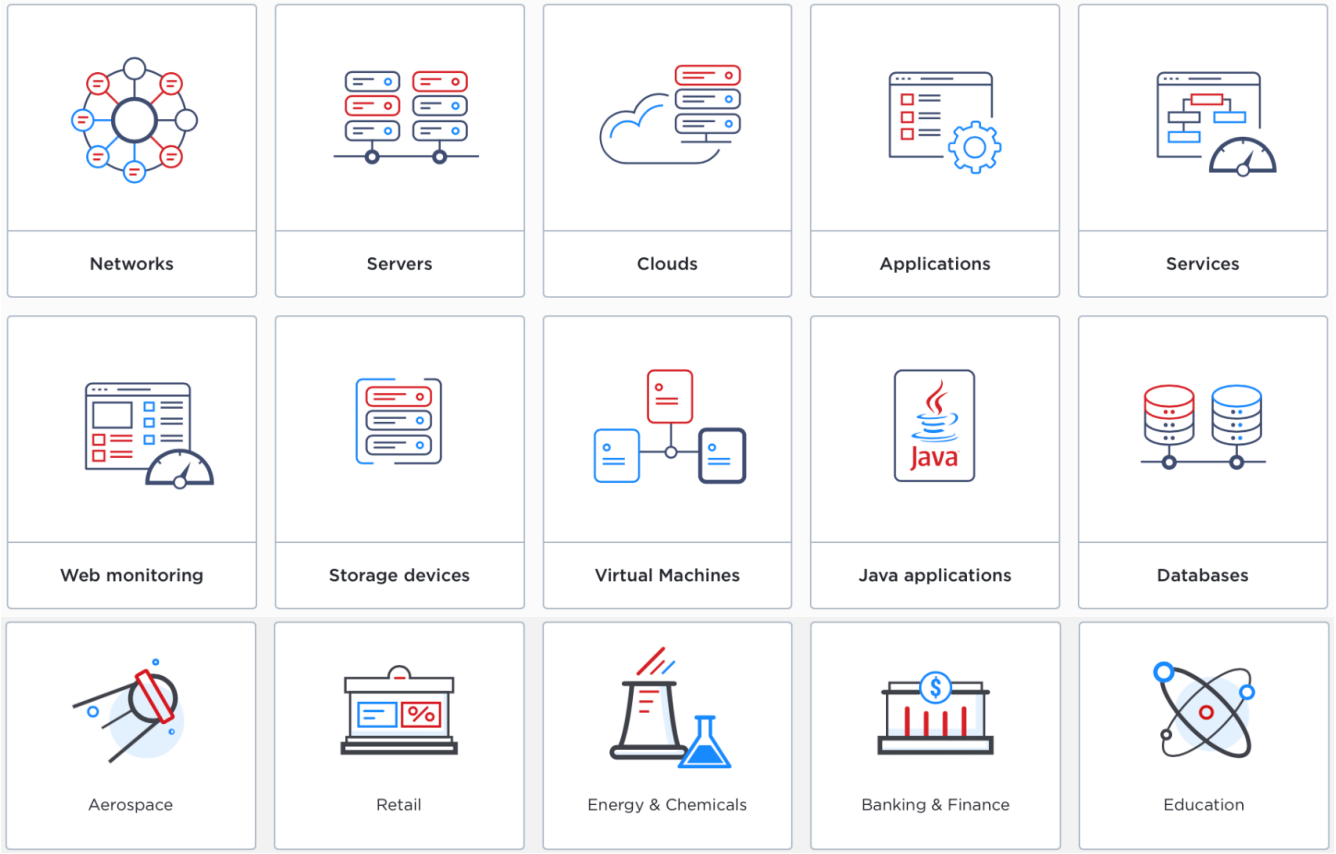
KPI monitoring: understand the state of health of your business and make rational decisions by checking collected data against planned numbers: profit, number of web visitors, number of purchases, amount of devices manufactured per hour, etc.

Capacity monitoring: plan your IT budget by measuring performance of IT infrastructure and reporting how much resources remain unused/are missing.

Configuration monitoring: make sure systems work accoring to rules by checking software versions, installed applications against the allowed ones run on your hardware.

Inventory monitoring: know the actual state of your IT equipment by monitoring licenses, RAM modules, disks, network devices and desktops, printers and other peripherals in actual use and comparing with the official (purchased) inventory.

Security monitoring: exclude security breaches to minimize losses by monitoring network port, malicious software, password files, root password, server case, etc.



System Overview

Data collection

WHAT KIND OF DATA CAN BE COLLECTED

Services: availability and the responsiveness of e-mail or web servers.

Network devices: network utilization, CPU, memory and port status.

Virtual machines: VMware vCenter and vSphere installations for various VMware hypervisor and virtual machine properties and statistics.

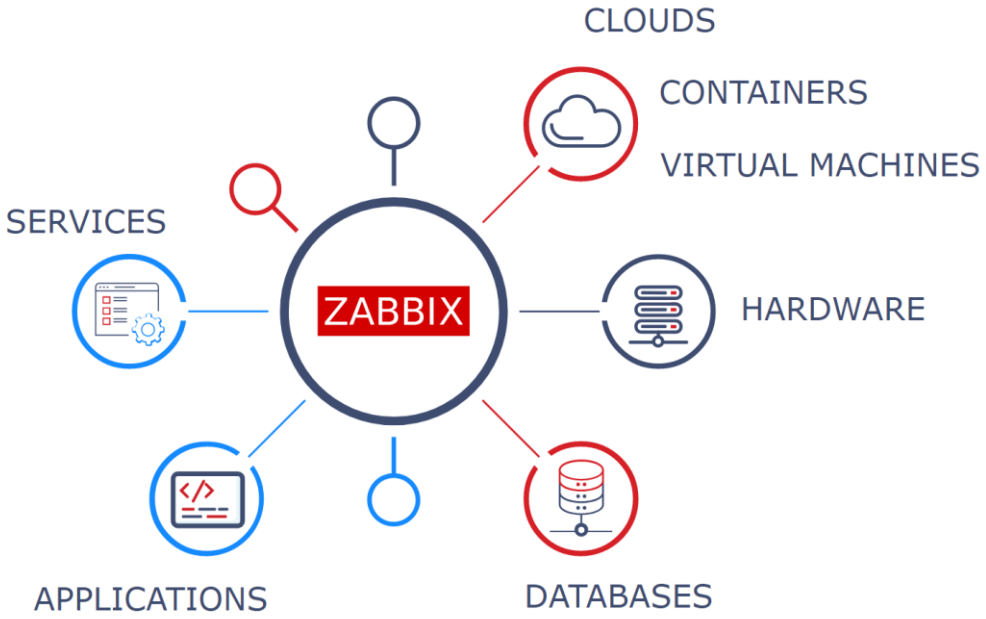
Databases: monitor in great detail any database, including MySQL, PostgreSQL, Oracle and Microsoft SQL Server.

Java Application Server: monitor JBoss, Tomcat, Oracle Application Server or any other application with the efficient Zabbix Java gateway.

Web services: easily monitor availability, response time and download speed of your external website, e-commerce portal or internal wiki and service desk system.

Hardware: gather statistics such as temperature, fan speed voltage, and disk state.

Customized monitoring: integrate ZABBIX in any environment and gather data from financial systems, environment control systems or even sophisticated research devices.



initMAX

Data collection

Zabbix **Agent** can work on different platforms and collect metrics from any device or application on performance and availability.

initMAX

Data collection

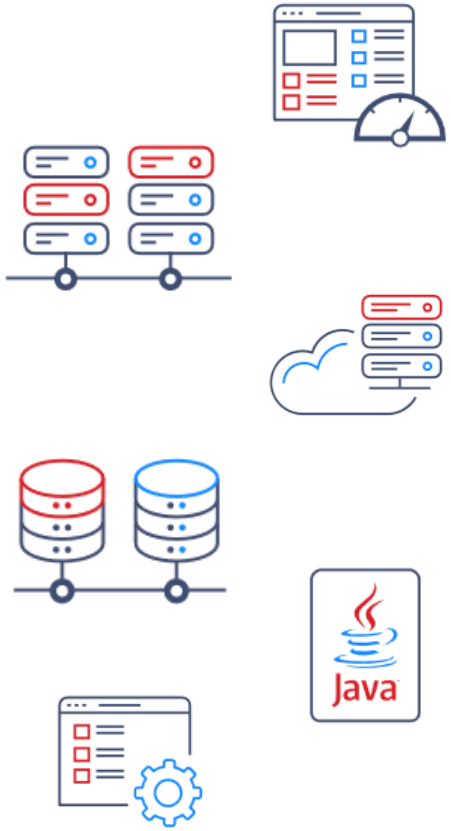
Zabbix **Agent** supports active/passive checks, is highly efficient and extendable via custom parameters, modules or scripts.

initMAX

Data collection

What if agent is not an option?

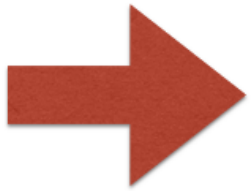
- SNMP, HTTP, IPMI and SSH agents
- Agentless monitoring
- Databases and Java applications monitoring
- Custom metrics/scripts
- Aggregation and calculated checks
- VMware monitoring
- Web monitoring



initMAX

Data collection: Pre-processing

Handler_update	0
Handler_write	414
Innodb_buffer_pool_dump_status	Dumping of buffer pool not started
Innodb_buffer_pool_load_status	Buffer pool(s) load completed at 170531 10:45:37
Innodb_buffer_pool_resize_status	
Innodb_buffer_pool_pages_data	513
Innodb_buffer_pool_bytes_data	8404992
Innodb_buffer_pool_pages_dirty	0
Innodb_buffer_pool_bytes_dirty	0
Innodb_buffer_pool_pages_flushed	37
Innodb_buffer_pool_pages_free	7676
Innodb_buffer_pool_pages_misc	2
Innodb_buffer_pool_pages_total	8191
Innodb_buffer_pool_read_ahead_rnd	0
Innodb_buffer_pool_read_ahead	0
Innodb_buffer_pool_read_ahead_evicted	0
Innodb_buffer_pool_read_requests	2535
Innodb_buffer_pool_reads	479
Innodb_buffer_pool_wait_free	0
Innodb_buffer_pool_write_requests	515
Innodb_data_fsyncs	7
Innodb_data_pending_fsyncs	0
Innodb_data_pending_reads	0
Innodb_data_pending_writes	0
Innodb_data_read	7918080
Innodb_data_reads	505
Innodb_data_writes	54
Innodb_data_written	641024



initMAX

Data collection: Pre-processing

12 C	Right trim	Temperature: 12
{“users“:10022}	JSON	User count: 10022
“GET /index.html HTTP/1.0“ 200 28083	Regexp	Response code 200 Size 28083
Unstructured text	Regexp	Version Apache 2.4.37 DNS lookup threads 10

2

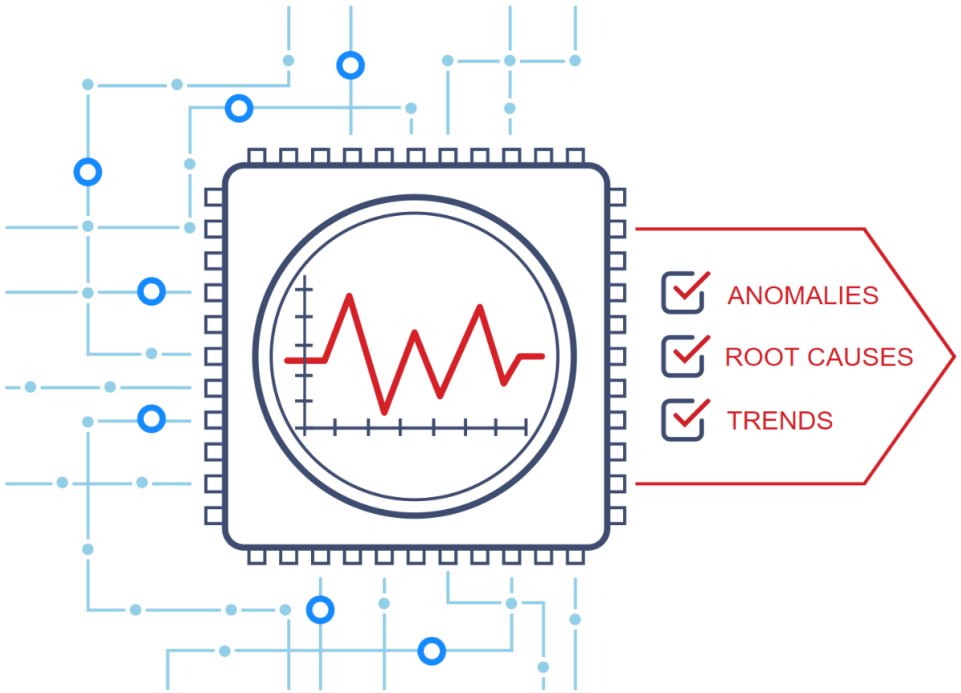
Problem detection

initMAX

Problem detection

Detect problems from the incoming data flow automatically

- Flexible definitions
- Multiple severity levels
- Correlation/root cause analysis
- Anomaly detection
- Trend prediction



initMAX

Problem detection

Sometimes there are signs of an impending problem. If you notice these signs in time, you can take action in advance and prevent or at least reduce the impact of the problem.

- What is the value of the data item after a certain time? Example: how much free space will there be on the server in a week's time?

- When will the value of the data item approach the threshold? Example: when the server will have less than 1GB of free space?

3

Visualization

initMAX

System Overview

Visualization

Present your IT environment on Web interface using:

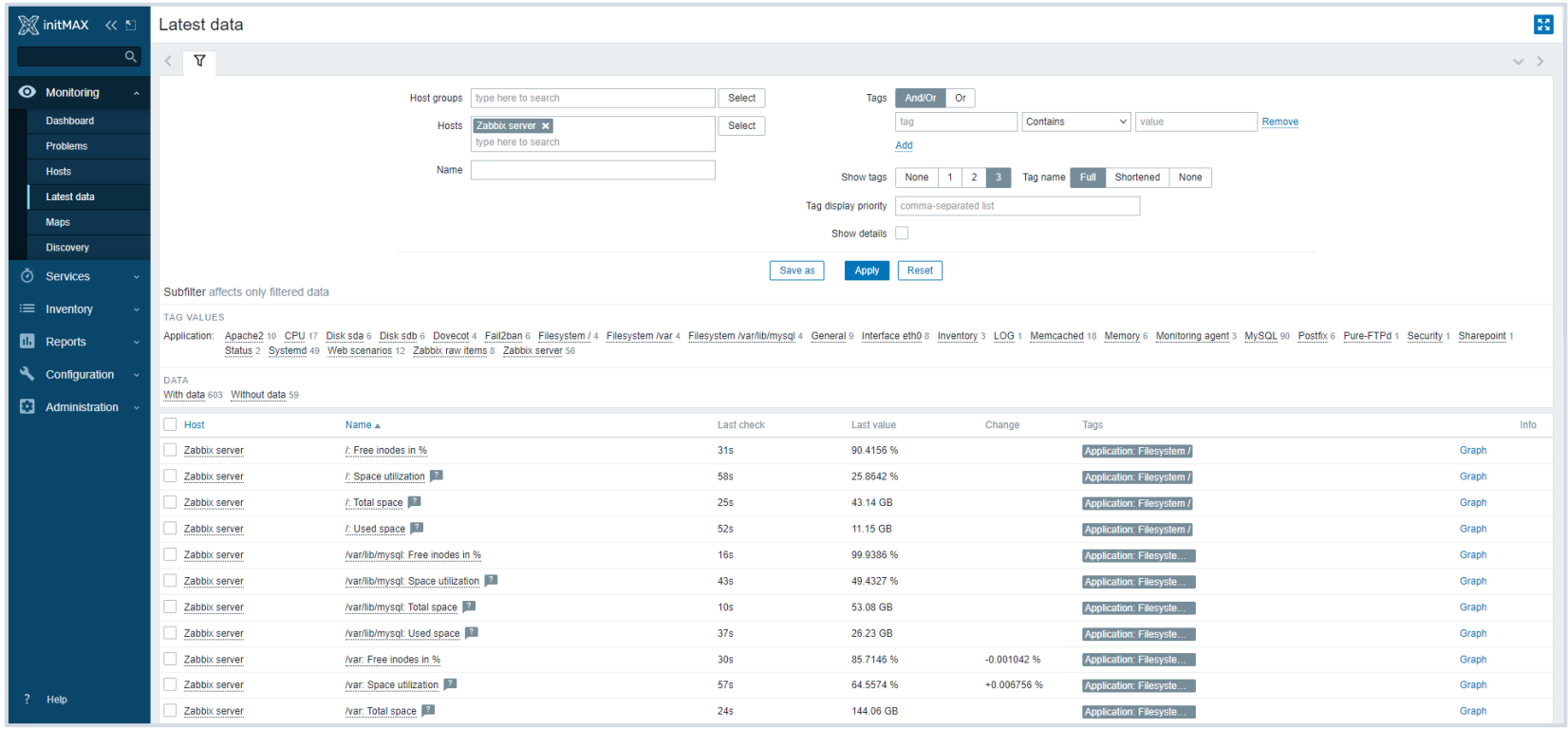
- Widget-based dashboards
- Graphs
- Network maps
- Geographical maps
- Slideshows
- Drill-down reports

Visualization: Latest data

All values in the database are stored as raw and averaged data.

The refresh interval and the storage time is set for each data item separately (or automated through a template).

Automatic database cleaning from old data.



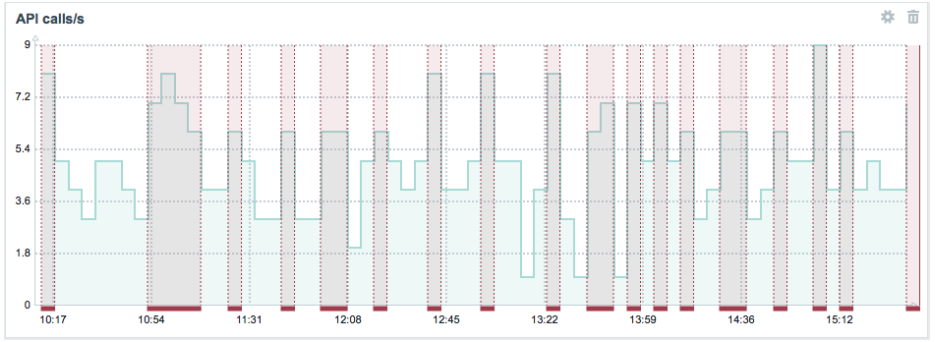
Visualization: Graphs

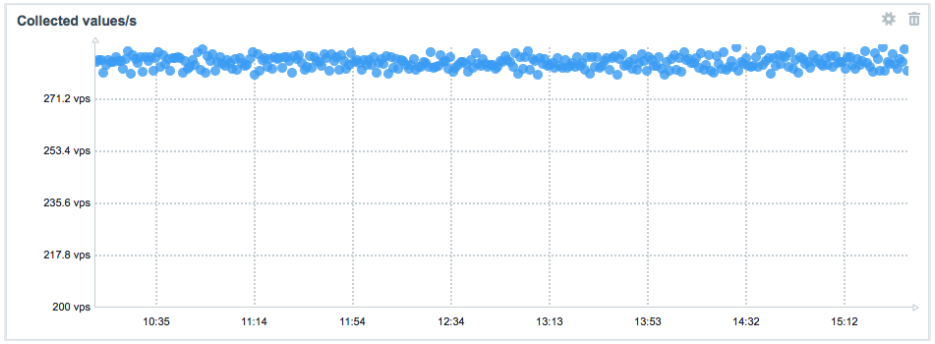
A **standard graph** for a numeric item is available without any configuration at all - these graphs are generated on runtime.

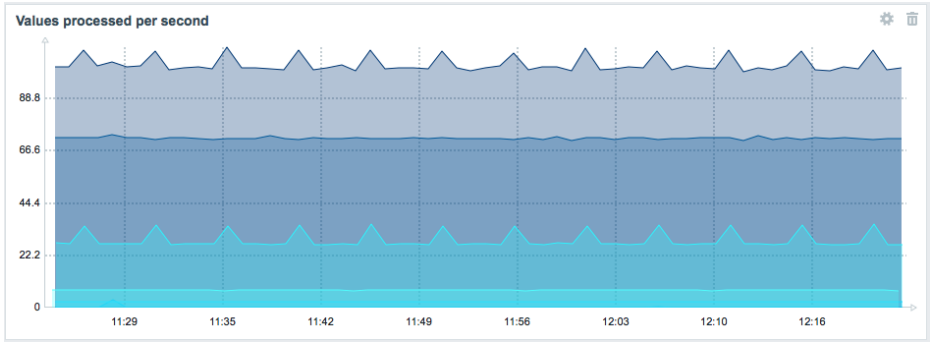
In a **custom graph** data of several items can be compared and you can specify the graph style, or the way lines are displayed.

Ad-hoc graphs - create a comparison graph for multiple items with little effort and no maintenance.

Graph - dashboard widget allows to add data sets and define their visual representation.

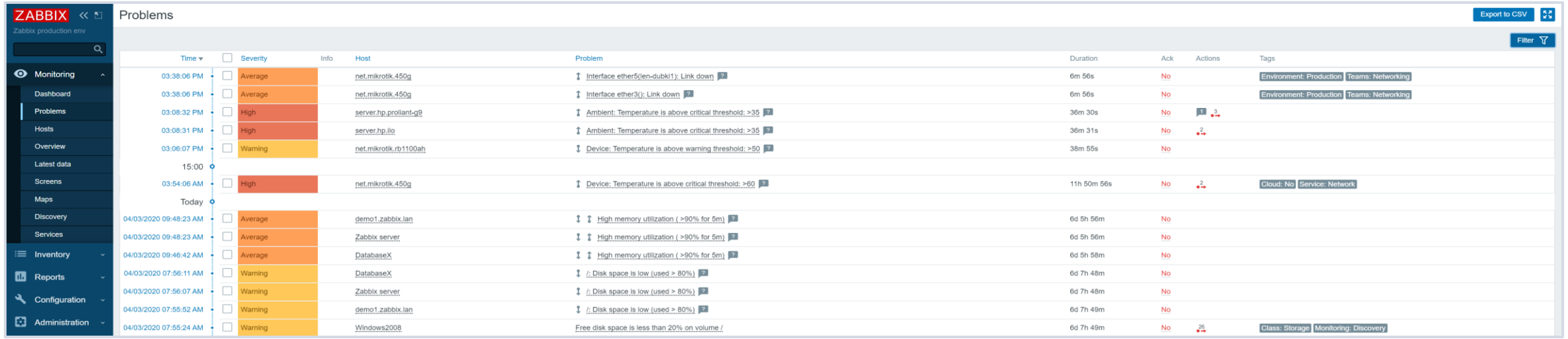






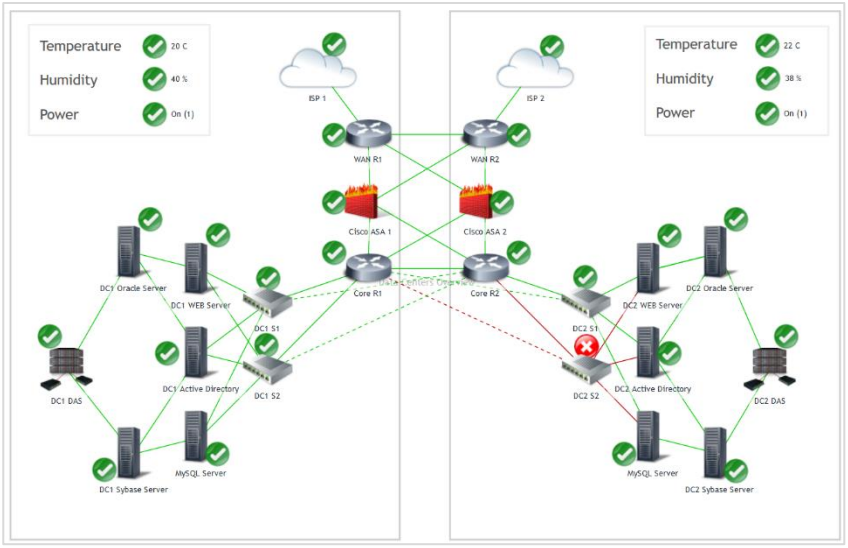
System Overview

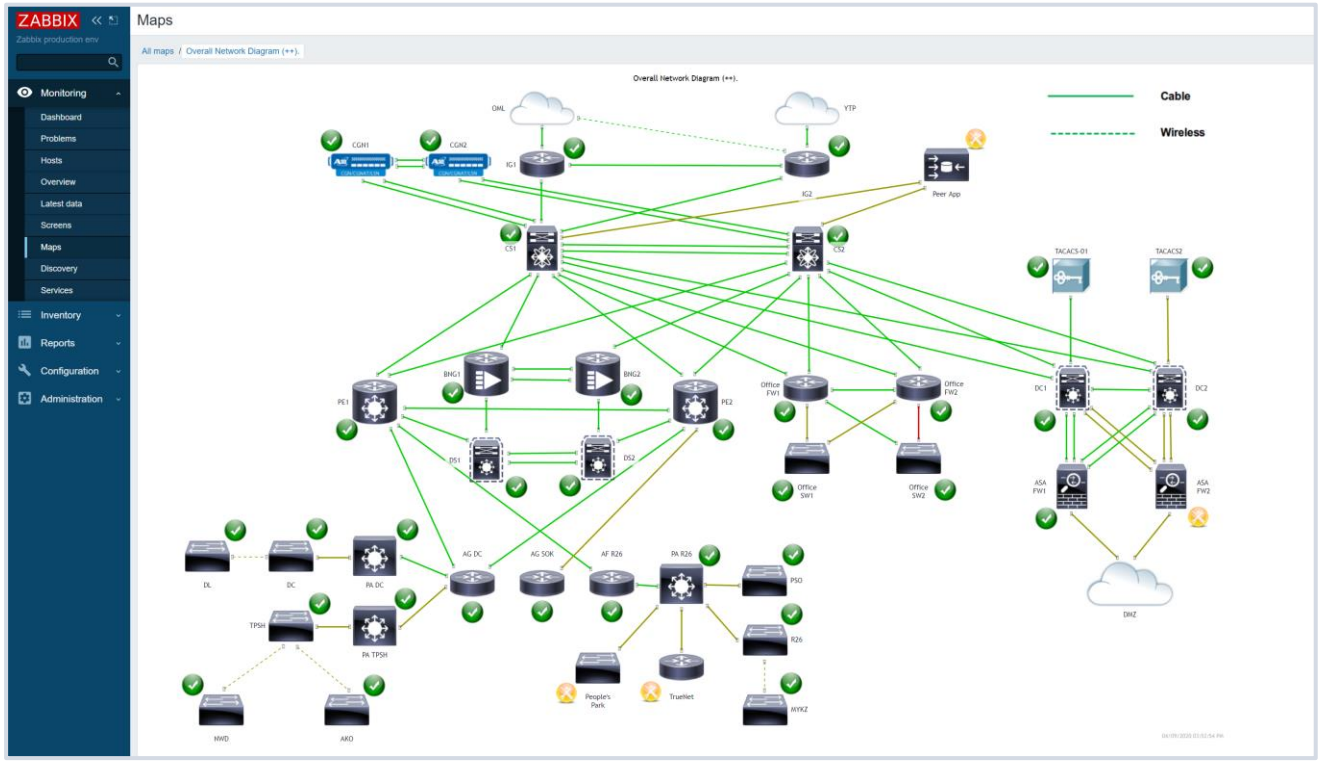
Visualization: Problems



Visualization: Maps

Zabbix network maps offer a possibility of laying out the monitored environment over an optional background image for a user-friendly overview. Each element on the map may represent a host, host group, single trigger, an image or another map.

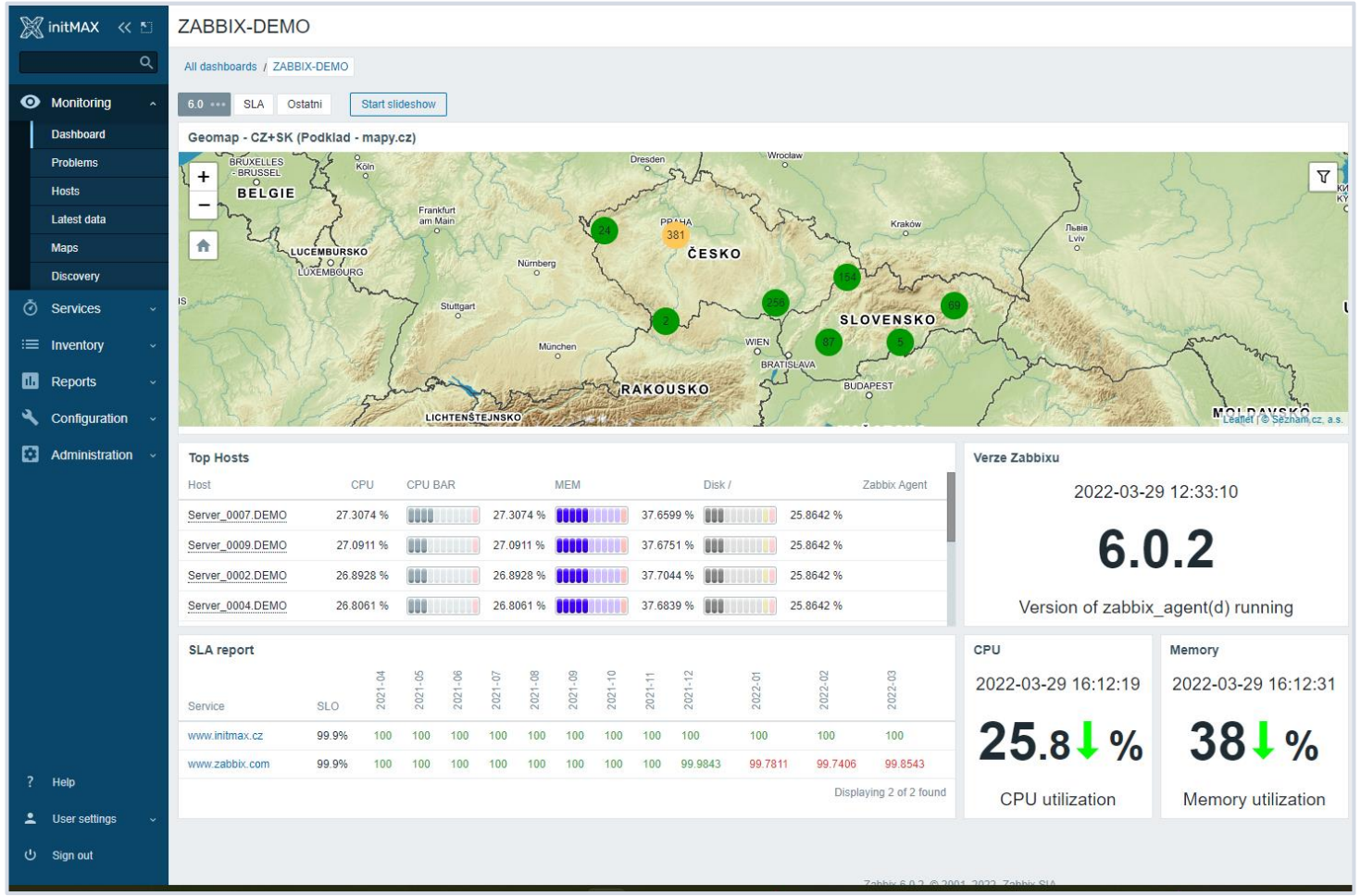




Visualization: Dashboards

Zabbix Dashboard is a central place in the web frontend that provides personalized details about the monitored environment:

- Drill-down reports
- Maps
- Graphs
- Screens
- Problems
- System status
- Host status
- Status of Zabbix server
- Discovery status
- Web



4

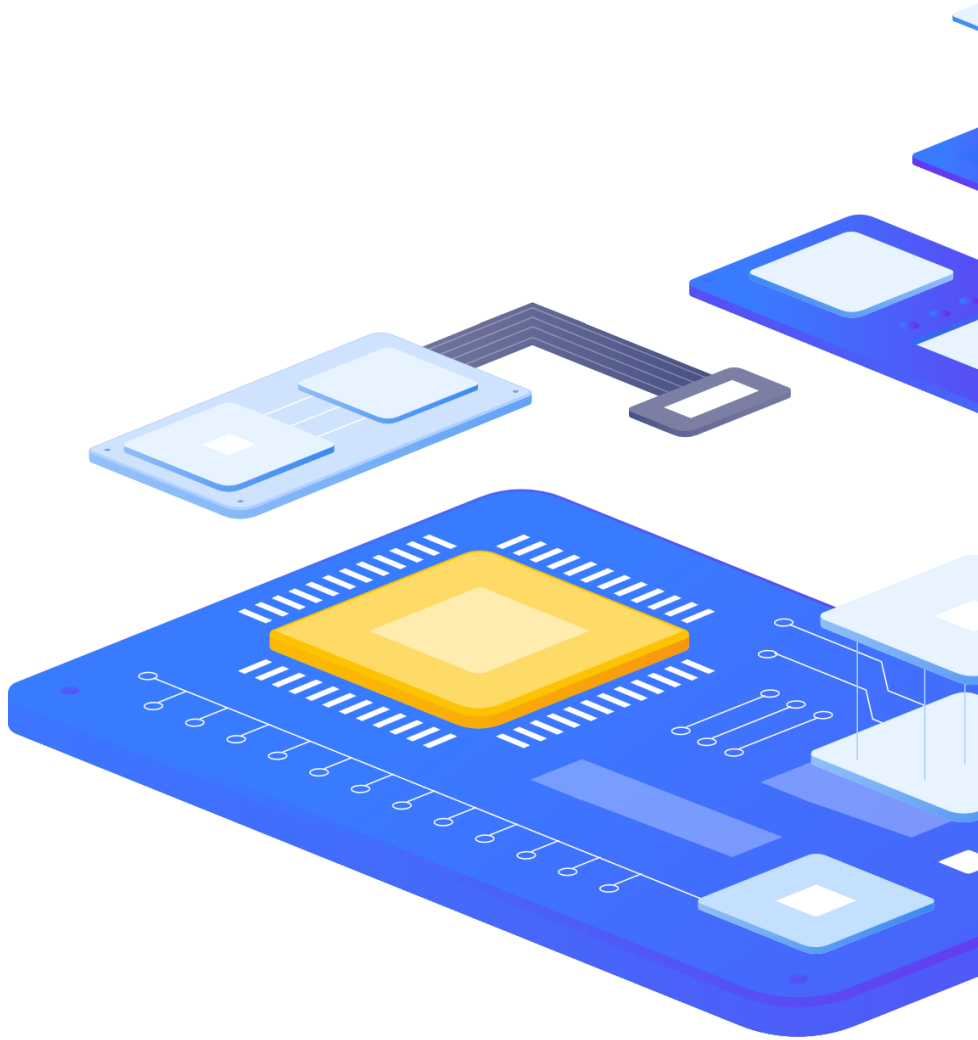
Tags

initMAX

Tags

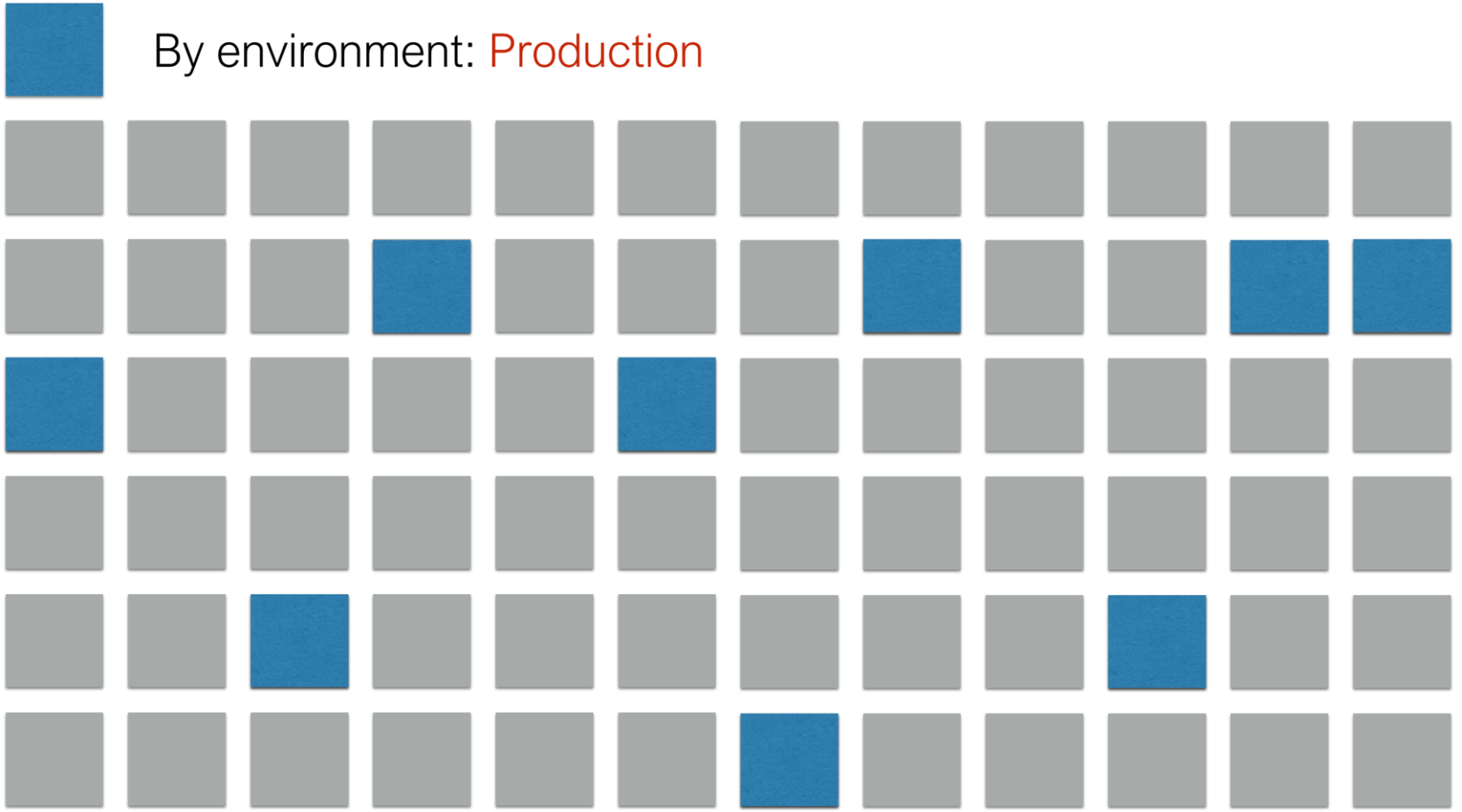
Tag word: meaning

- **Customer: Globus**
  Customer: Nokia
- **Datacenter: Prague**
  Datacenter: Riga
- **Environment: Prod**
  Environment: Test
- **Impact: None**
  Impact: Critical



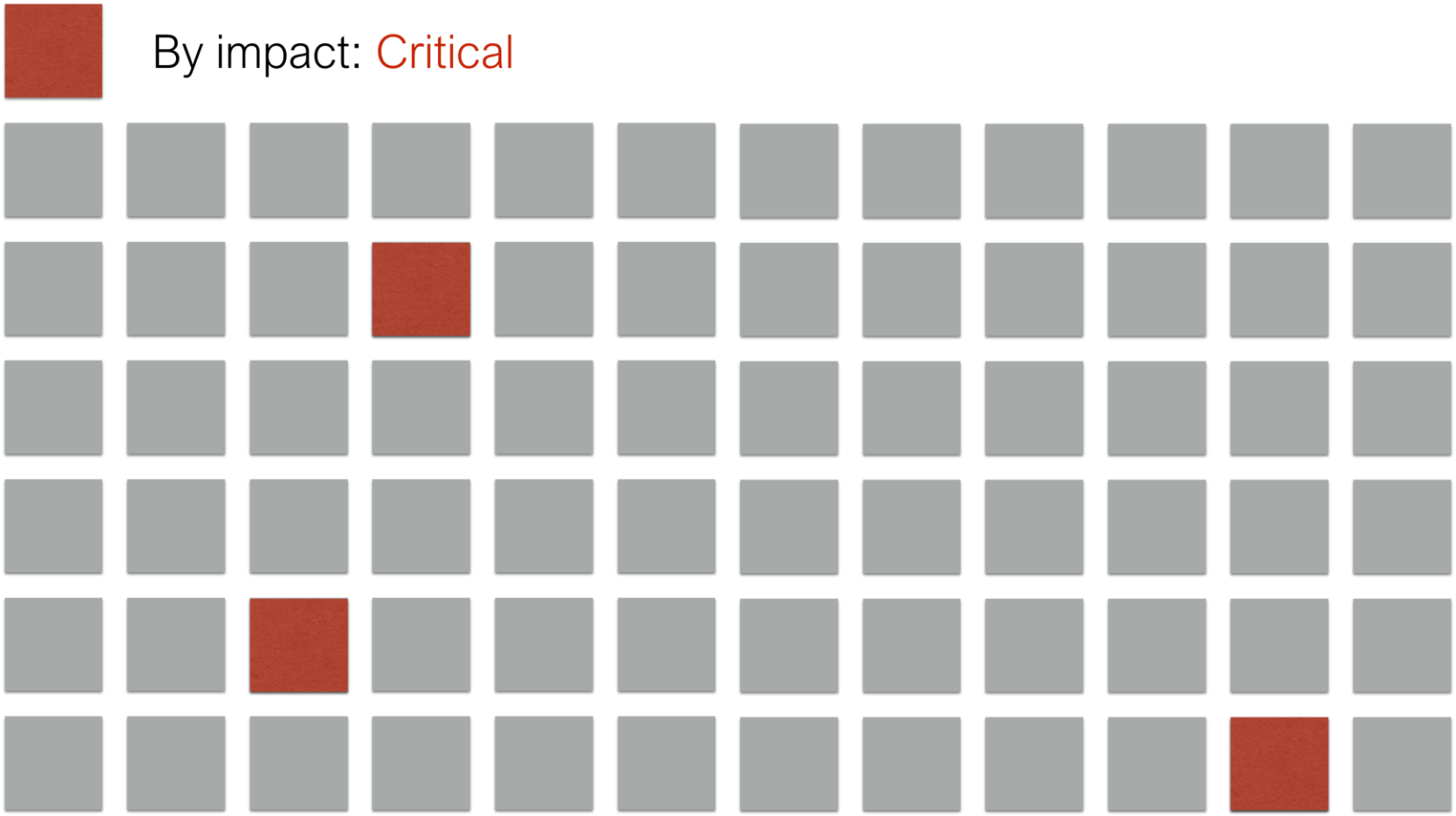
initMAX

Tags



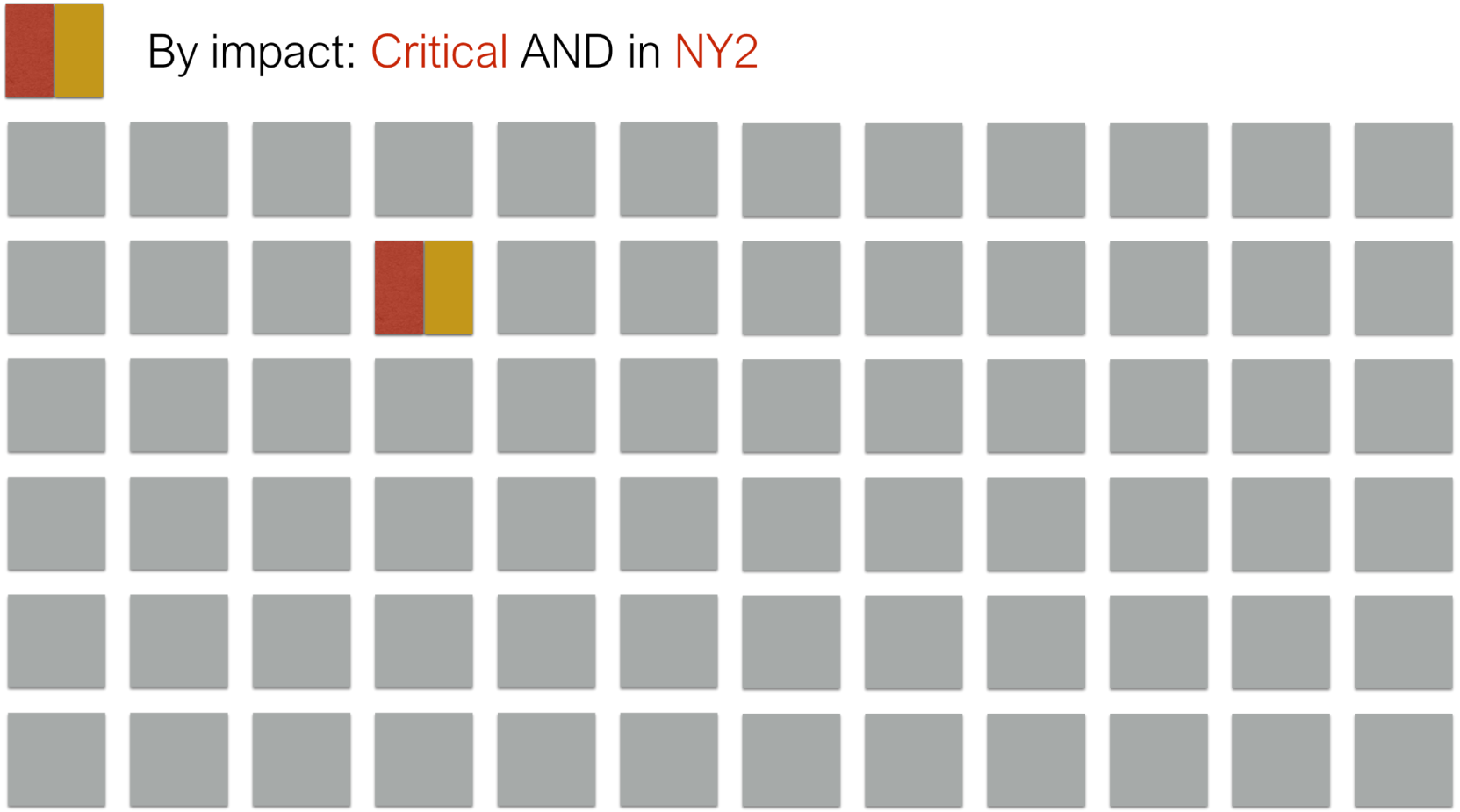
initMAX

Tags



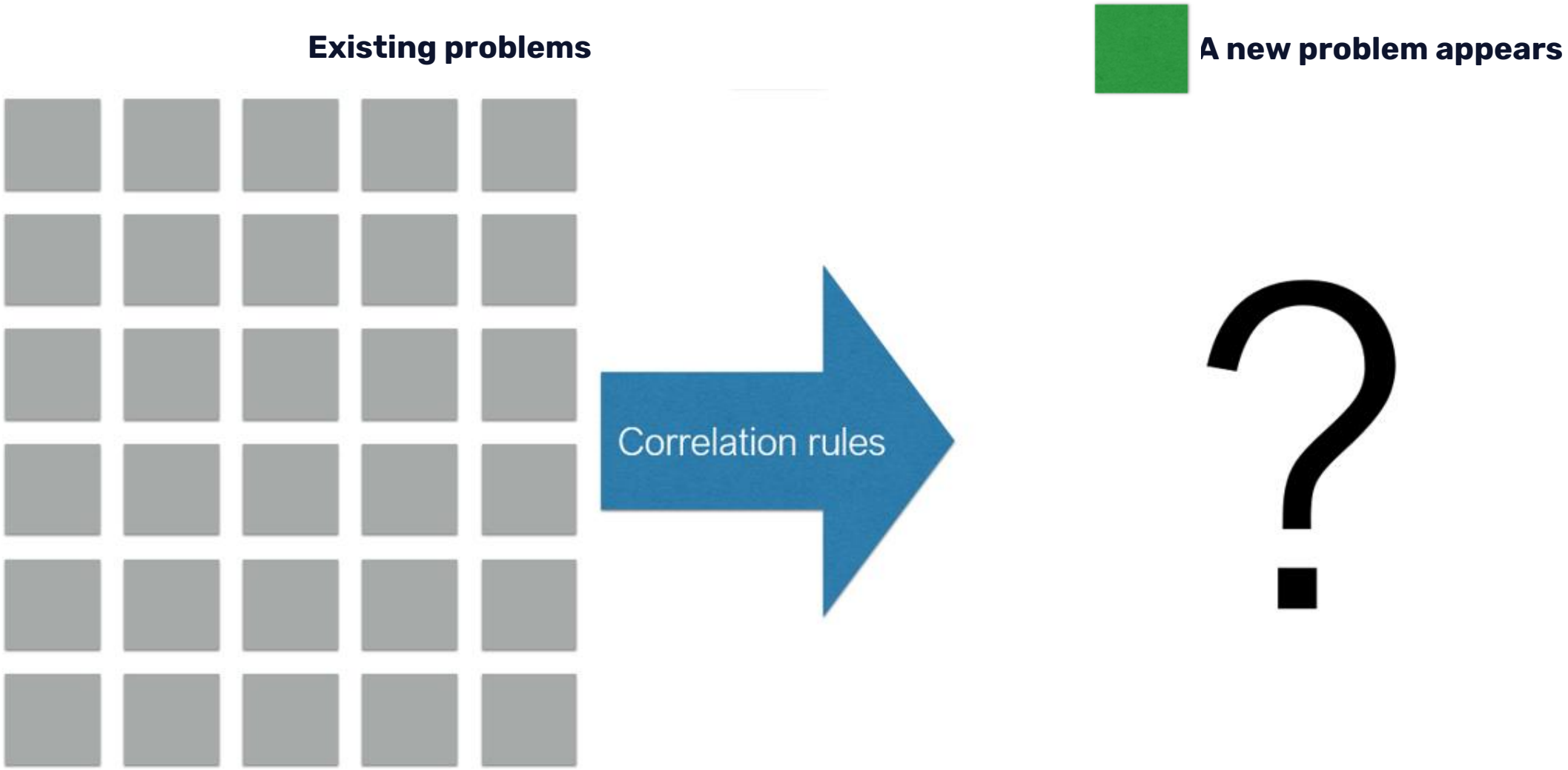
initMAX

Tags



initMAX

Event Correlation

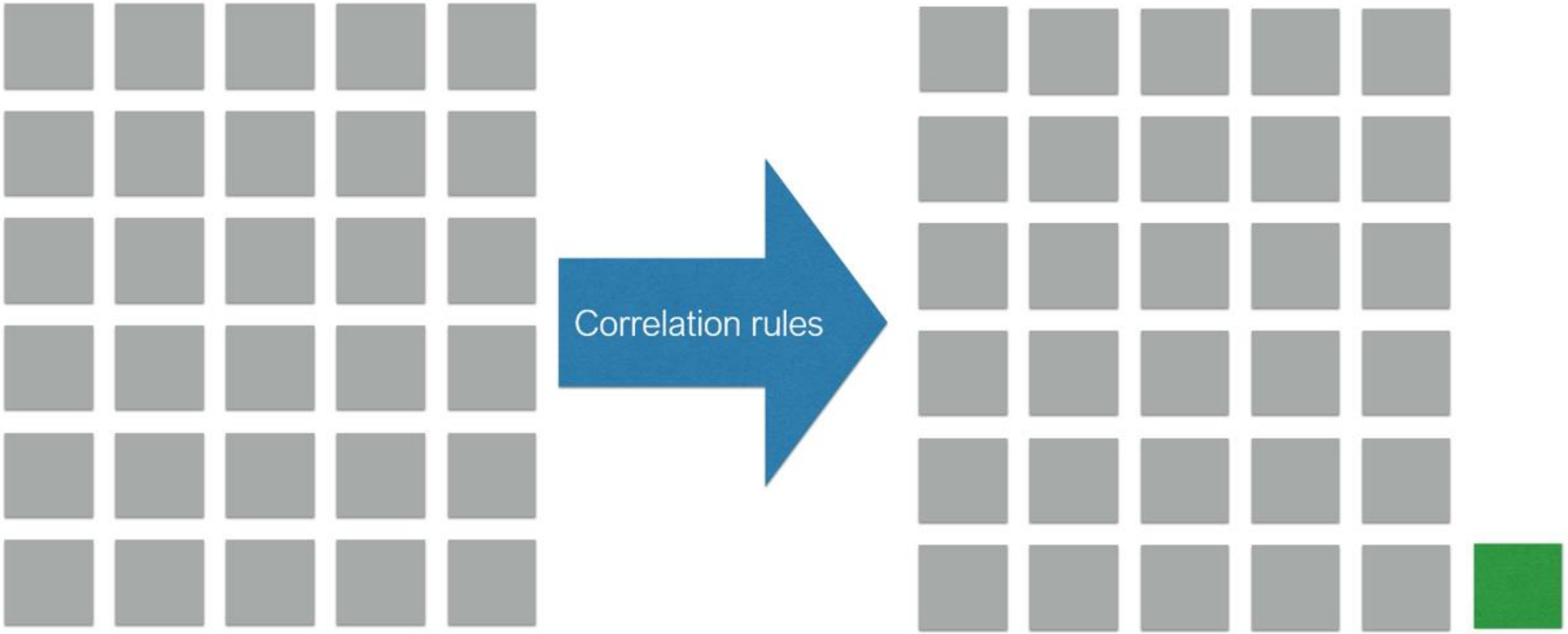


initMAX

Event Correlation

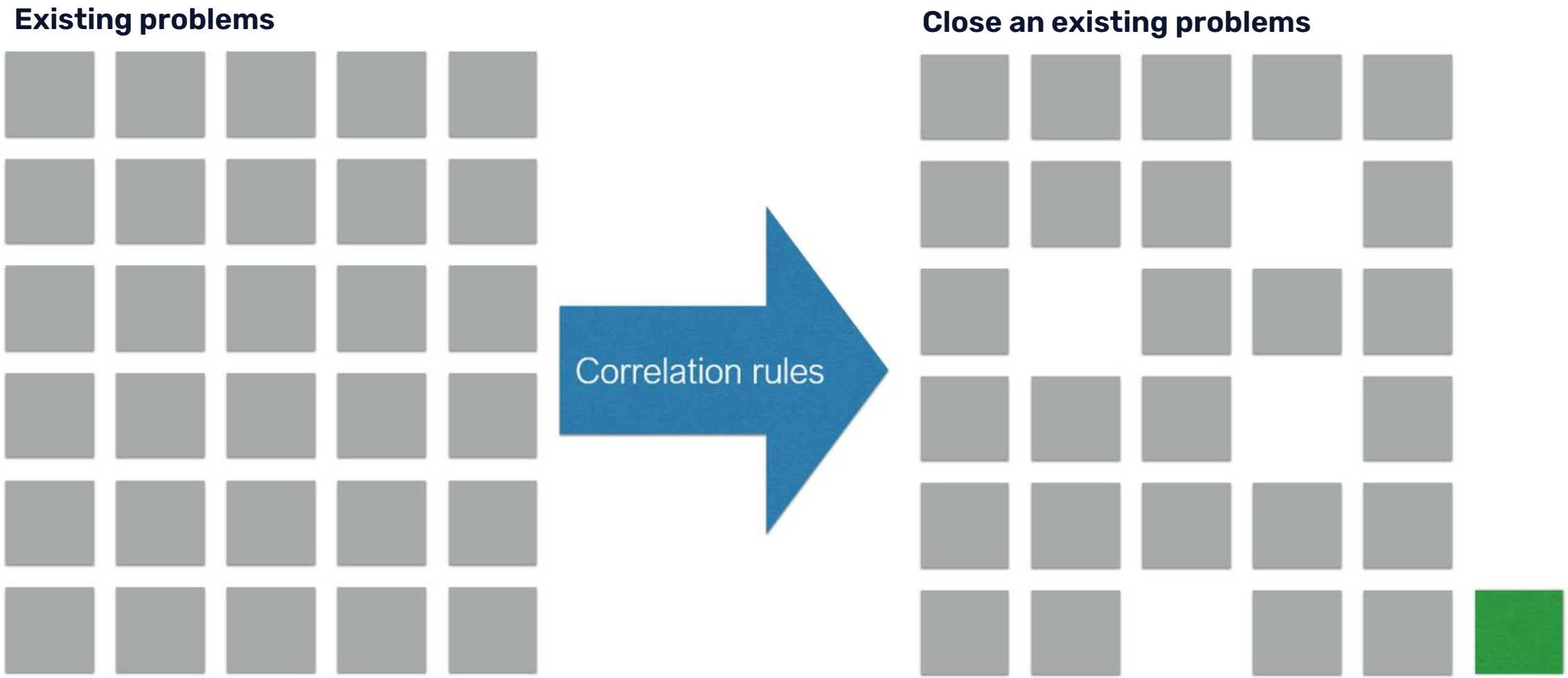
Existing problems

A new problem appears



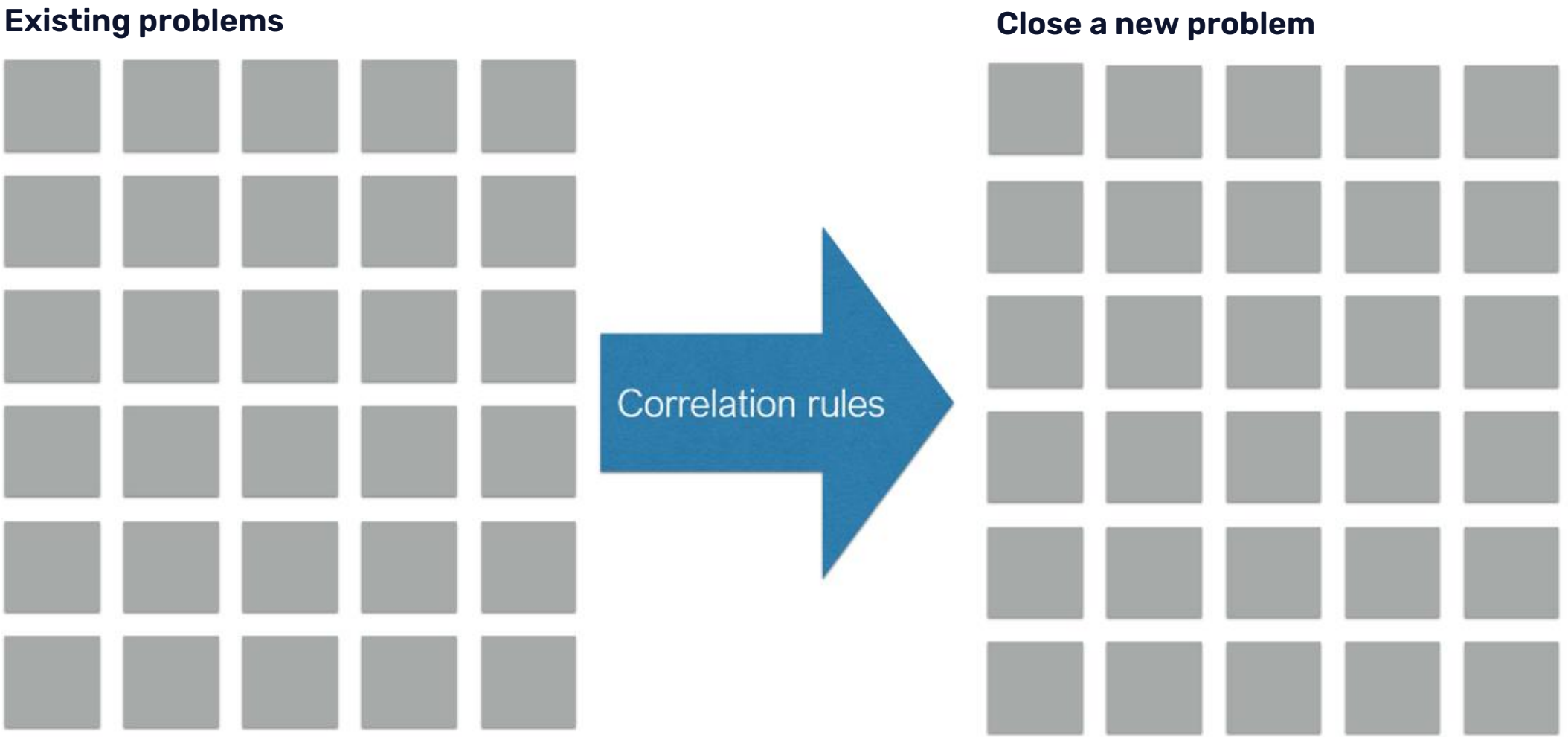
initMAX

Event Correlation



initMAX

Event Correlation



5

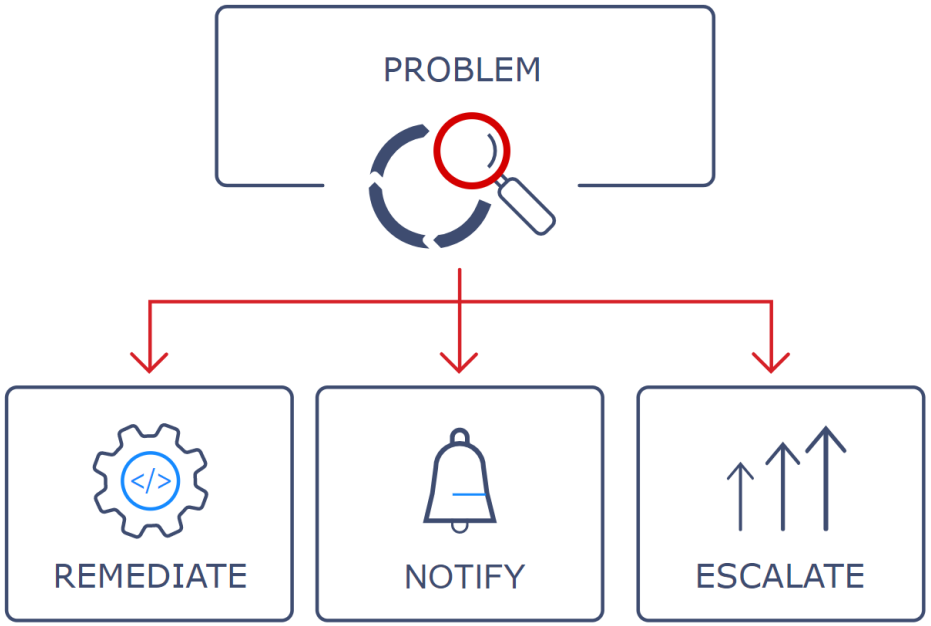
Features

initMAX

Alerting & notifications

Be notified in case of any issues using different channels:

- Send messages
- Let Zabbix fix issues automatically
- Escalate problems according to flexible user-defined Service Levels
- Customize messages based on recipient's role
- Customize messages with runtime and inventory information

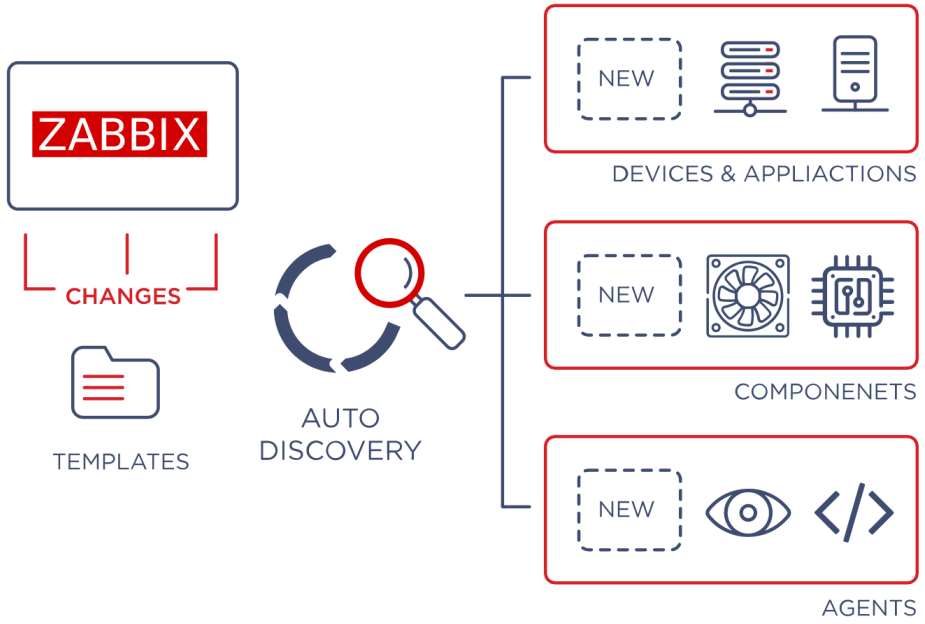


initMAX

System Overview

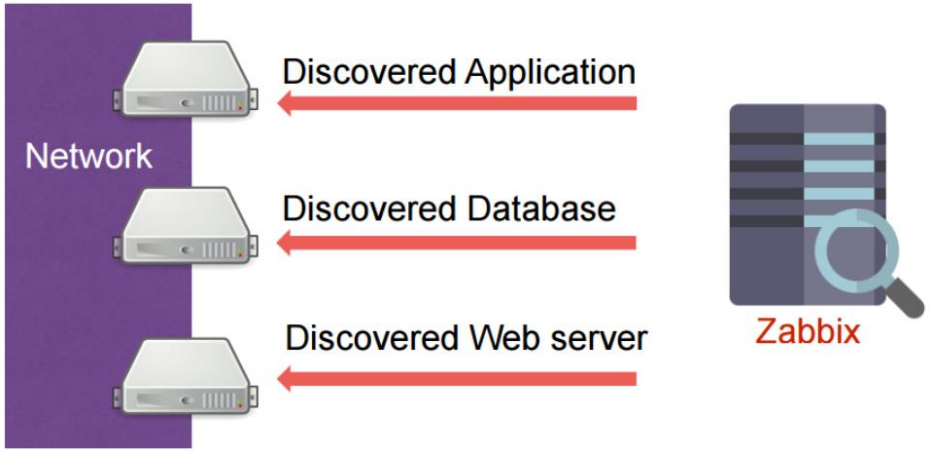
Auto-discovery

Monitoring of large, dynamic environments with minimal effort.

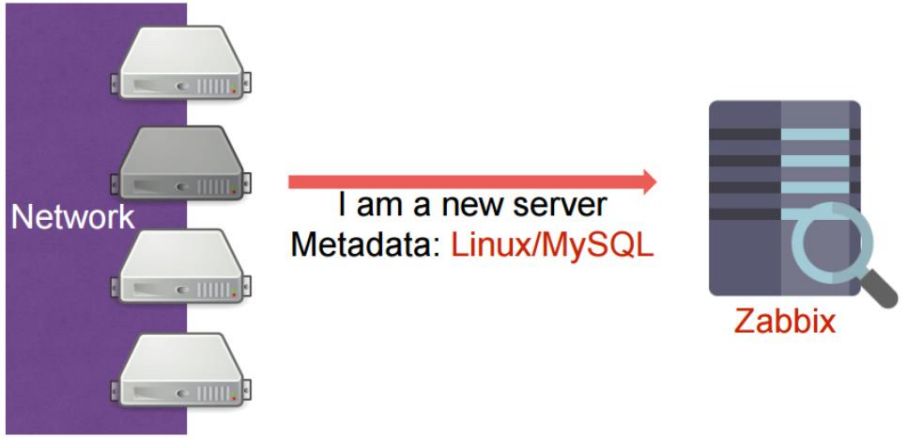


Auto-discovery

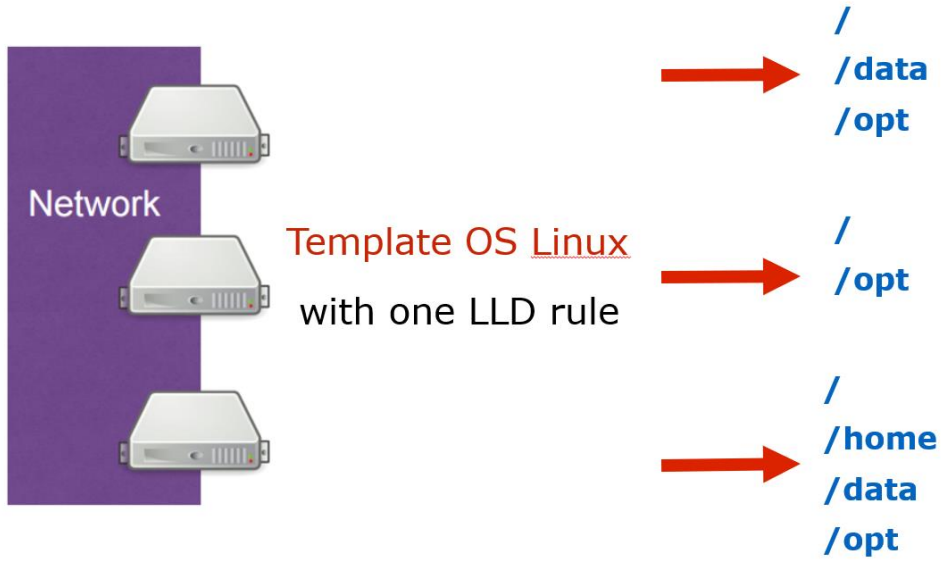
Network discovery: periodically scans the network to detect changes and performs specified actions.



Agent auto-registration: configure automatized monitoring of new equipment with Zabbix agents installed.



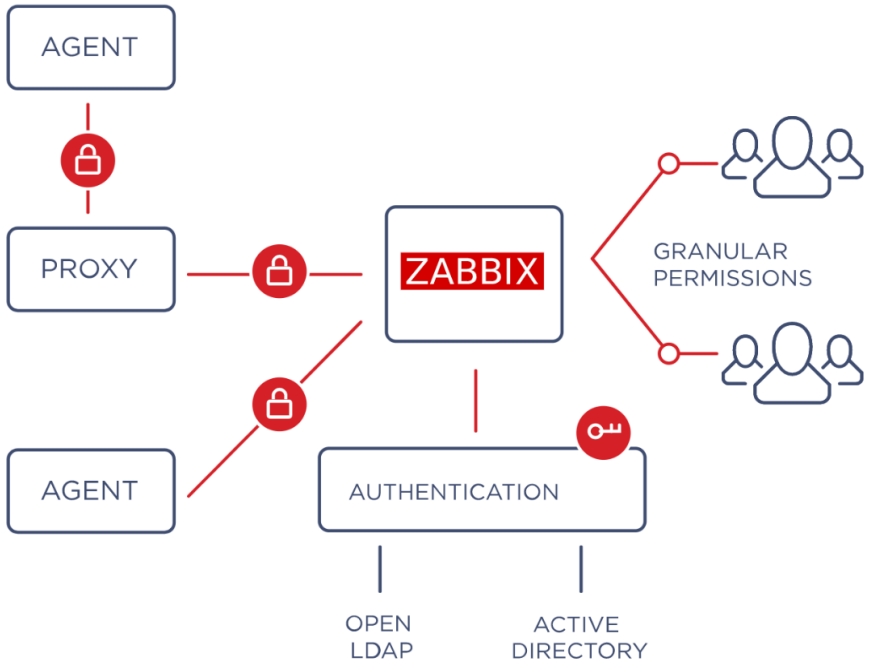
Low-level detection: automatically creates data items, triggers and graphics on the host.



Security

Protect your data

- Strong encryption between all Zabbix components
- Multiple authentication methods: Open LDAP, Active Directory, SAML
- Flexible user permission schema
- Zabbix code is open for security audits

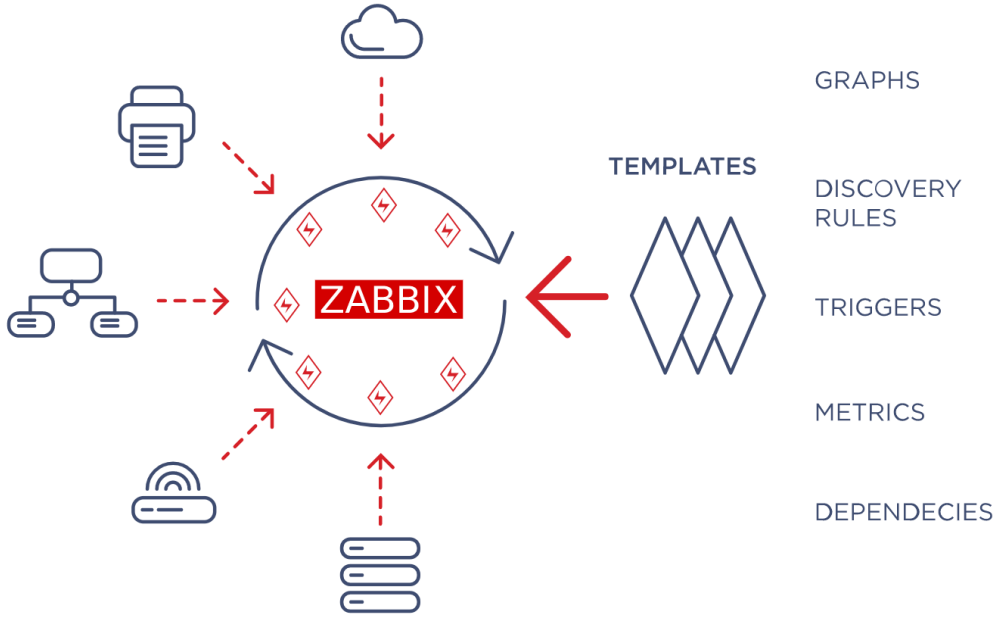


System Overview

Effortless deployment

Save your time

- Install Zabbix in minutes
- Use out-of-the-box templates for most of popular platforms
- Build custom templates
- Use hundreds of templates built by Zabbix community
- Apply for Template building service from Zabbix team
- Monitor thousands of similar devices by using configuration templates
- More: https://share.zabbix.com



initMAX

System Overview

Distributed monitoring

Build distributed monitoring solution while keeping centralized control

- Collect data from thousands of monitored devices
- Data compression
- Monitor behind the firewall, DMZ
- Collect data even in case of network issues
- Remotely run custom scripts on monitored hosts

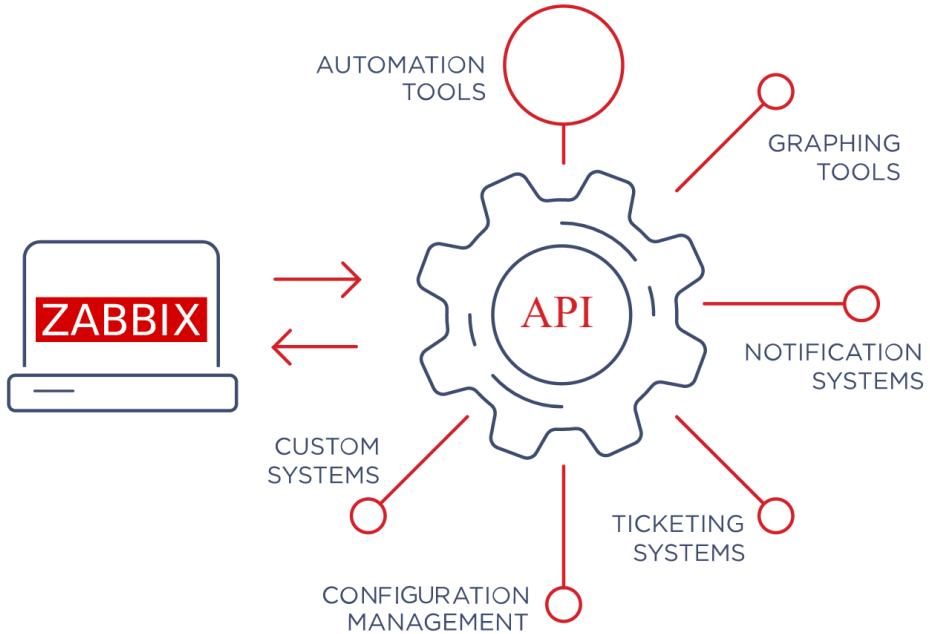
System Overview

Zabbix API

Integrate Zabbix with any part of your IT environment

Get access to all Zabbix functionality from external applications through Zabbix API:

- Automate Zabbix management via API
- Create new applications to work with Zabbix
- Integrate Zabbix with third party software: Configuration management, ticketing systems
- Retrieve and manage configuration and historical data



6

Questions?

ZABBIX 6.0 LTS

initMAX

Contact us:

Phone:	+420 800 244 442
Web:	https://www.initmax.cz
Email:	tomas.hermanek@initmax.cz
LinkedIn:	https://www.linkedin.com/company/initmax
Twitter:	https://twitter.com/initmax1
Tomáš Heřmánek:	+420 732 447 184