

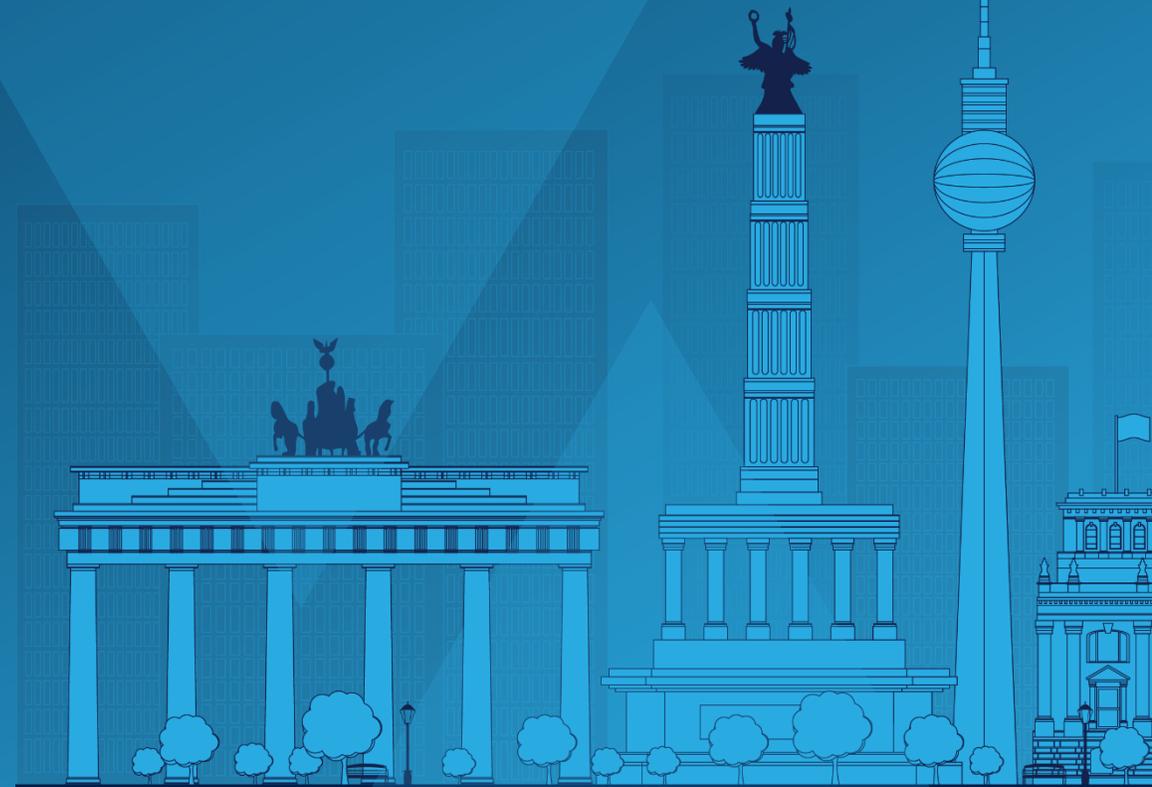
Zabbix: Present and Future

ALEXEI VLADISHEV
FOUNDER, CEO

ZABBIX '23

CONFERENCE

GERMANY





Aerospace



Education



Banking



Retail



Chemicals



Government



Healthcare



Finance



Telcos



IT



Marketing



Transaction processing/payments

Is my business up and running?

We help businesses deliver
flawless services for a
better world and happier people

Our vision

ZABBIX

A universal, free,
and open-source enterprise-level
monitoring solution

ZABBIX '23
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GERMANY

A single pane of glass

IT & OT

The ultimate monitoring and observability
solution

Extremely adaptable to all possible use cases

Lowest TCO

Superb visualization and reporting

Built-in ML and AI for anomaly detection and
operations

Highly scalable (downscaling and upscaling)

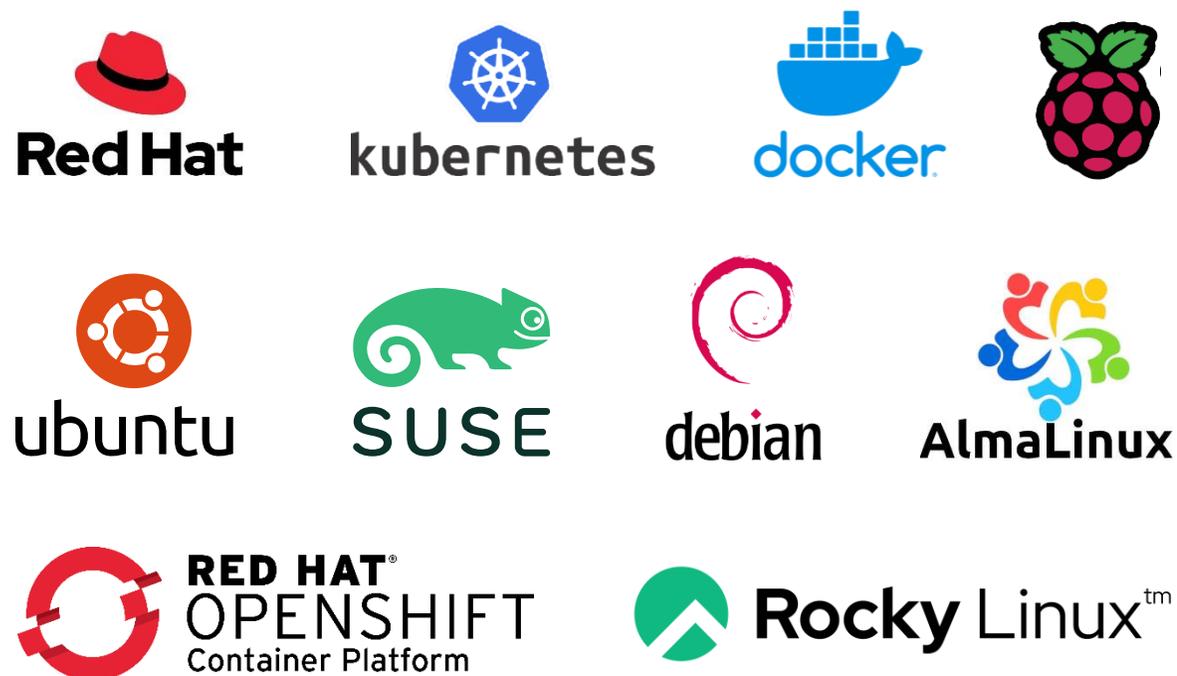
Strategy



Staying open-source

An inclusive solution

ON-PREMISE



IN THE CLOUD





Sustainability

Long-term thinking

24x7 professional services for end-users and MSPs



Steady growth



150+
Zabbix **team** members

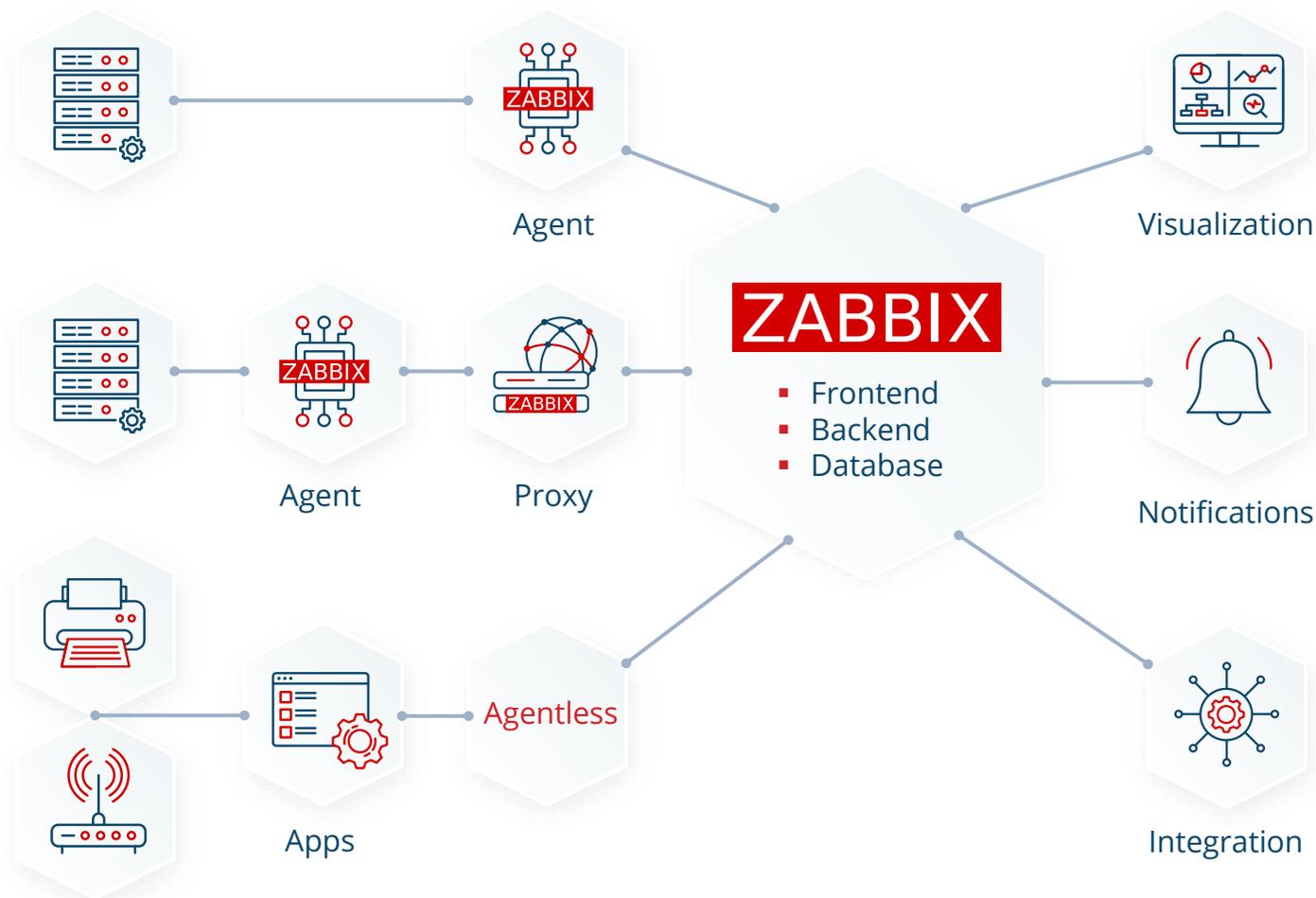
250+
partners around the world



An all-in-one platform

One product to cover it all

Collect → Analyze → React and Visualize



High-quality data, also for **AIOps**

Proxies for **DM and Edge computing**

API for automation and integrations

Auto-remediation

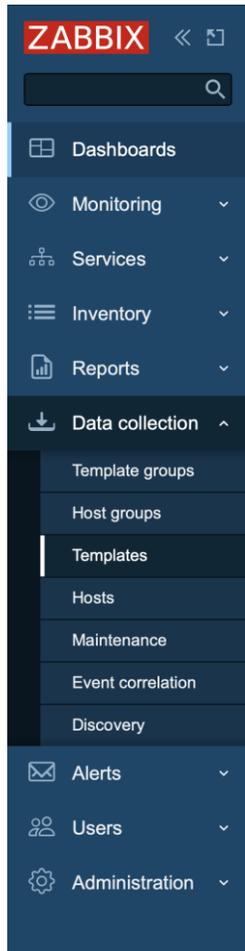
Anomaly detection

All levels: from infrastructure to business

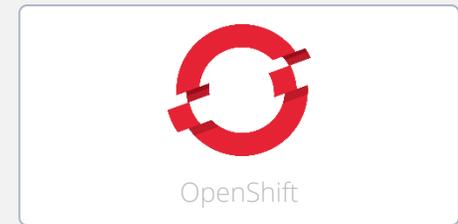
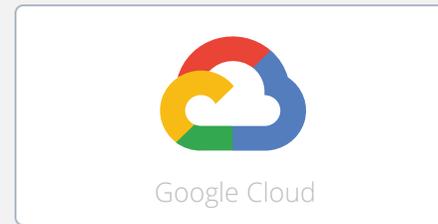
IT & OT
Business services
SLA/SLI
Synthetic
Cloud
K8S
OpenShift
Containers
APIs
WEB
User experience
Applications
Processes
OS
Environment
Hardware
Industrial
Network devices
IoT and sensor data

.NET	IC.Предприятие	Active Directory	ActiveMQ	Alcatel Lucent	Cloudstack	ClusterControl	Confluence	Cooling	CoreOS	HTTP	HTTPS	Huawei
Alerta	Android	Ansible	Antivirus	Apache	Couchbase	cPanel	D-Link	Database monitoring	Datacom	IBM AIX	IBM AS/400	IBM MQ
APC	Appdynamics	Application monitoring	Arduino	Arista	DB2	Debian	Dell	DNS	Docker	Ingress	Intel	InterSystems
Aruba	Asterisk	Avaya	AWS	AWS CloudWatch	Drupal	Elasticsearch	Eltex	EMC	Emerson	IRC	Jabber	JasperReports
AWS EC2	AWS S3	Backup	Bacula	Barracuda	Exim	Extreme Networks	F5 Networks	Facebook Messenger	Fedora	JBoss	Jenkins	Jira
Bigpanda	Blue Coat	BMC Remedy	BorgBackup	Brocade	firebird	Firewalls	Flowdock	Fortinet	FreeBSD	Julia	Juniper	Kafka
Buffalo	Bugzilla	C#	Capacity planning	Cassandra	FreshDesk	Fujitsu Siemens	Galera cluster	Geckoboard	Git	Kubernetes	KVM	Kyocera
Centos	Ceph	Check Point	Chef	Chrome extension	Glassfish	GLPI	Go	Google Apps	Google Cloud	Lenovo	Lexmark	Lighttpd
Cisco	Citrix	Cloud Foundry	Cloud monitoring	Cloudera	Google Maps	Grafana	Graylog	Hadoop	HAProxy	Logstash	Lucidworks	LXC
Cloudstack	ClusterControl	Confluence	Cooling	CoreOS	High Availability	Hipchat	Hitachi HDS, HNAS	HP Enterprise	HP-UX	Mattermost	Mellanox	Memcached

Out-of-the-box monitoring and integrations



Also cost explorer templates for Cloud providers!

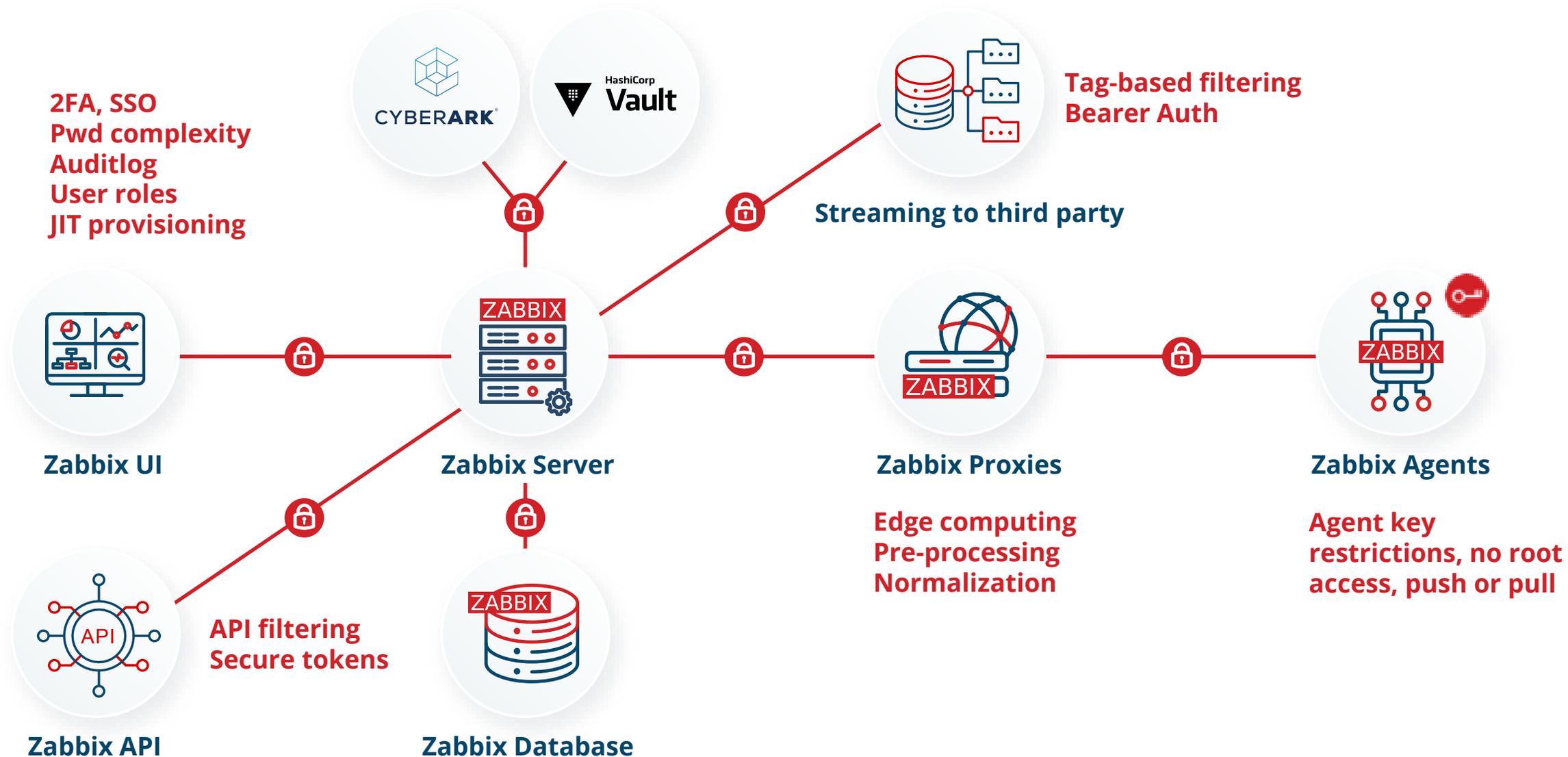




Quality and security

Our top priority

The highest security standards



Verified by independent researchers



Bounties paid in 2023: **\$16K**

Zabbix ID	CVE number	CVSS score	Zabbix severity	Synopsis
ZBV-2023-07-27-9	CVE-2023-29458	5.9	Medium	Duktape 2.6 bug crashes JavaScript putting too many values in valstack.
ZBV-2023-07-27-8	CVE-2023-29457	6.3	Medium	Insufficient validation of Action form input fields
ZBV-2023-07-27-7	CVE-2023-29456	5.7	Medium	Inefficient URL schema validation
ZBV-2023-07-27-6	CVE-2023-29455	5.4	Medium	Reflected XSS in several fields of graph form
ZBV-2023-07-27-5	CVE-2023-29454	5.4	Medium	Persistent XSS in the user form

Security advisories and CVE database

A single pane of glass

Total visibility and transparency

Visualization and reporting



Zabbix 7.0 LTS

All widgets for host and global dashboards and reporting

Stable framework for widget devs

A new set of advanced widgets

Dynamic dashboards for drill-down and specific use cases

New widgets for real-time viewing and reporting

Core widgets

Pie and donut charts

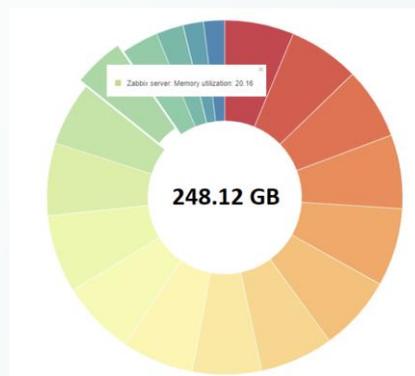
Gauge charts



Reporting

Capacity reports

Management reports



Widgets navigators

Host navigator

Item navigator

Countries	
▶ Estonia	12 105
▼ Germany	3 3
Berlin	3 3
▶ Latvia	9 103
▶ USA	12 105

Advanced visualization

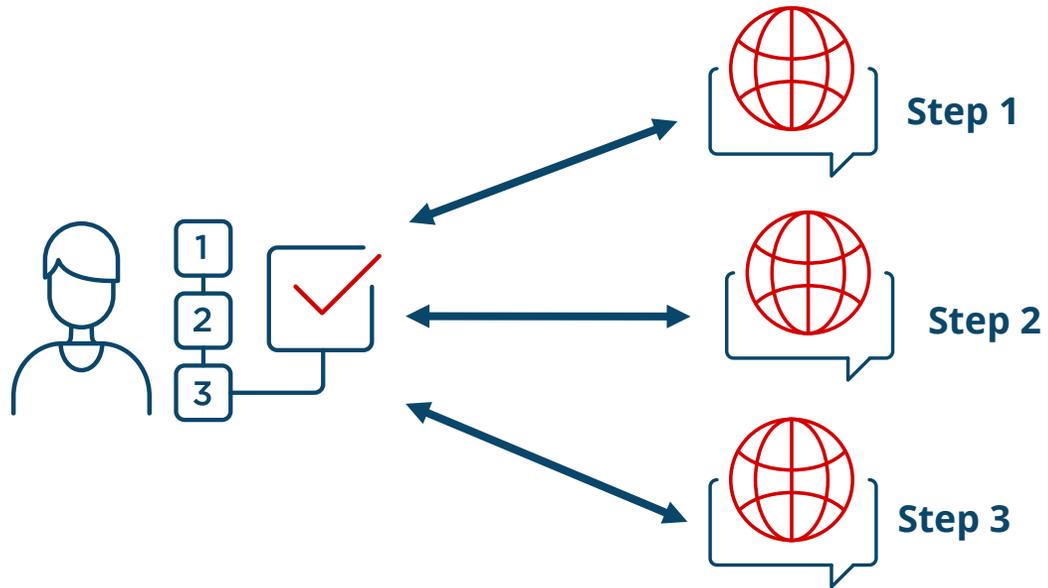
Honeycombs

Service trees

Topology



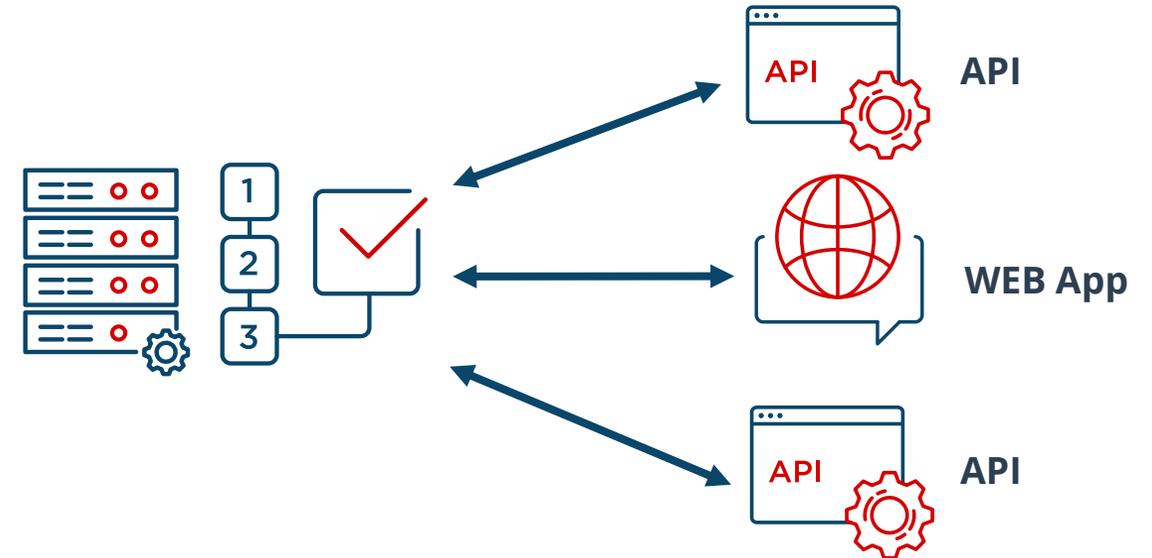
Synthetic monitoring



Monitoring user experience

End-user experience monitoring for WEB apps

Business scenario monitoring



Executing multi-step checks

Complex interaction with Cloud APIs over HTTPS

Advanced availability checks

Business scenario monitoring

A single pane of glass

Dashboards

Scheduled PDF reporting

Business service monitoring (BSM)

User roles

Metric processing

Data processing

APM and tracing functionality

OpenTelemetry

Topology data

Processing of streaming data

Tracing, events, logs, binary

Visualization and reporting

Visualization of complex data: tracing, flows, etc

Widgets for advanced visualization

Massive usability improvements of Zabbix UI

Custom UI for any use case

Framework for widget development

Zabbix 6.0 LTS

Zabbix 7.0 LTS

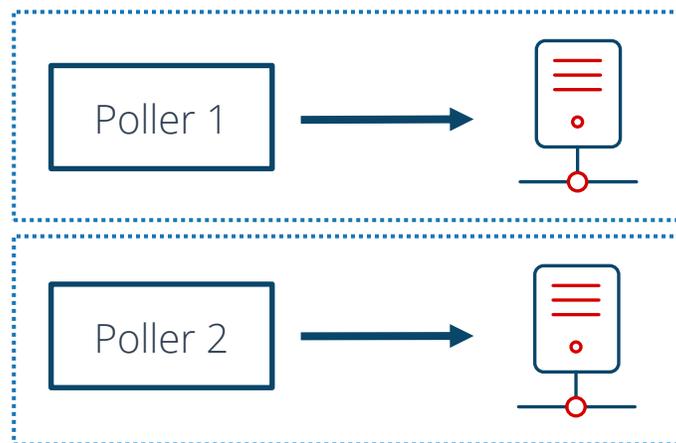
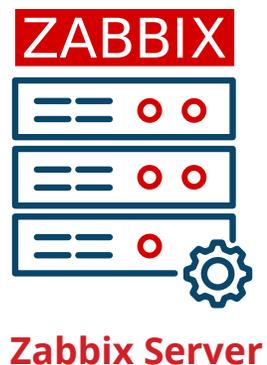
Zabbix 8.0 LTS

Reducing operating costs

It's not only about performance!

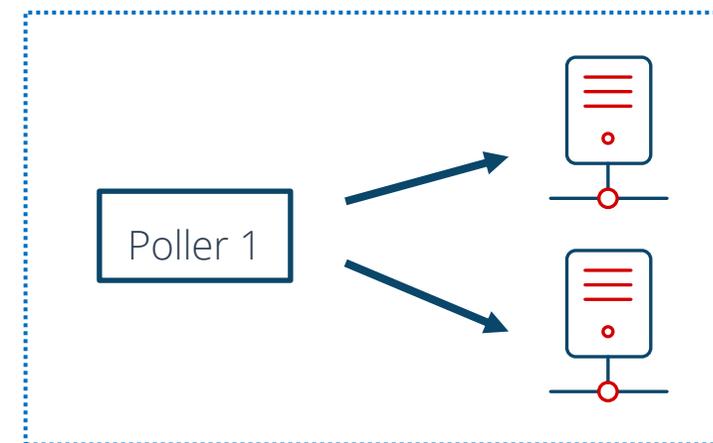
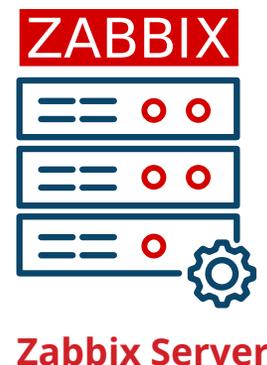
Performance: transition to async and threads

Now



One connection per poller

7.0 LTS



Thousands of connections per poller

One poller/discoverer to handle **thousands of connections**

Much lower resource usage = lower costs and energy use

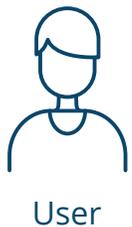
Enables **auto-scaling** in the future

Performance: faster front-end for larger scale



Now

← 0.2s



← 2-3s
(too much!)



7.0 LTS

→ 0.2s



Super admin

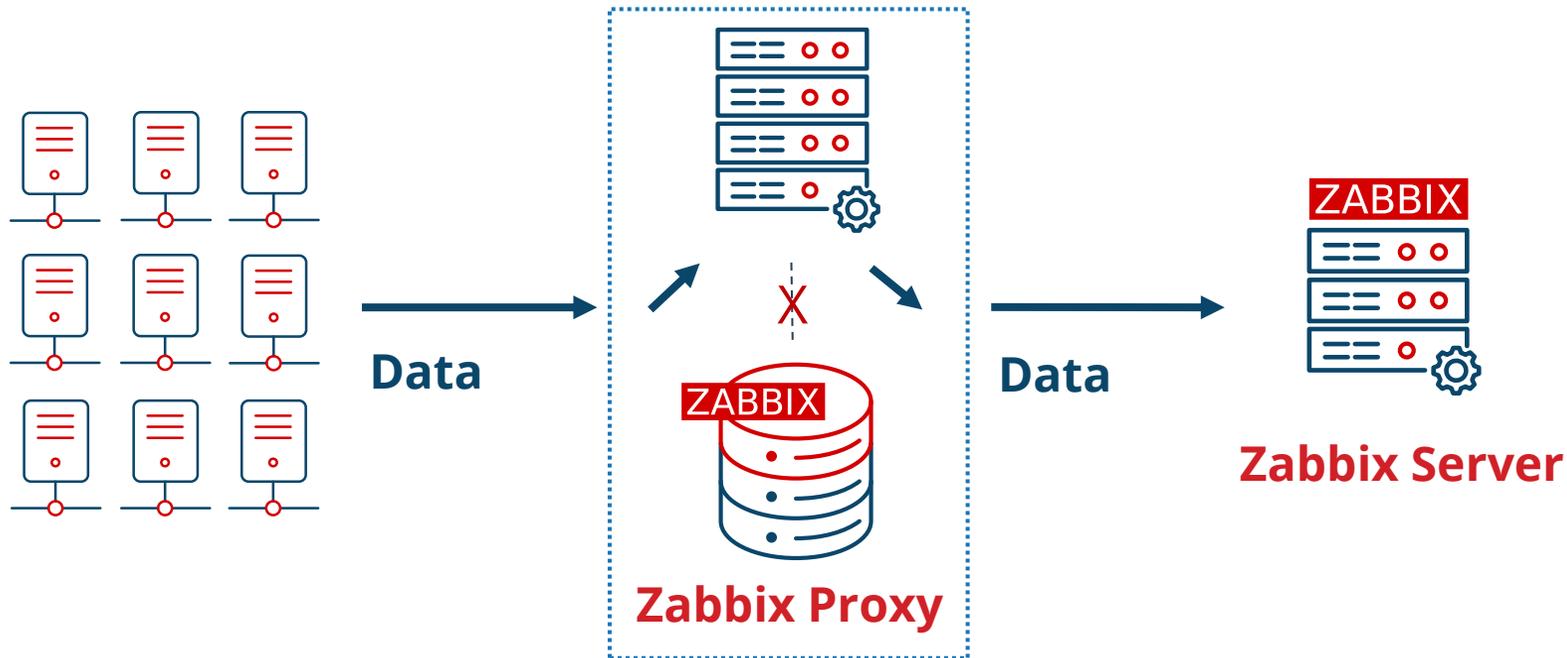
→ 0.2-0.3s



User

10x faster permission checks for non-superadmins

In-memory data collection mode for proxies



Less IOPS
Faster
Cheaper
Less energy

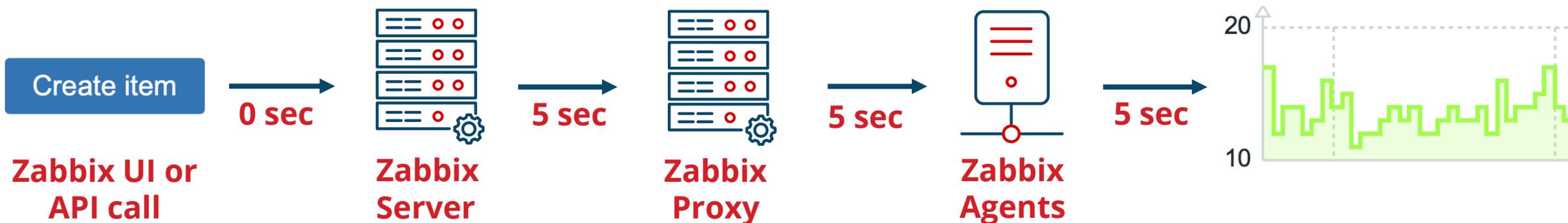


Instant configuration update

Incremental updates of configuration changes

New items are now checked **within a minute** after creation

Extreme responsiveness!



Centralized management of ITEM timeouts

- GUI
- Autoregistration
- Timeouts**
- Images
- Icon mapping
- Regular expressions
- Trigger displaying options
- Geographical maps
- Modules
- Connectors
- Other

Timeouts for item types

- * Zabbix agent 4s
- * Simple check 4s
- * SNMP agent 4s
- * External check 4s
- * Database monitor 4s
- * HTTP agent 4s
- * SSH agent 4s
- * TELNET agent 4s
- * Script 4s

Network timeouts for UI

- * Communication 3s
- * Connection 3s
- * Media type test 65s
- * Script execution 60s
- * Item test 60s
- * Scheduled report test 60s

[Update](#) [Reset defaults](#)

Proxy Encryption Timeouts

Timeouts for item types Global Override [Global timeouts](#)

- * Zabbix agent 4s
- * Simple check 4s
- * SNMP agent 4s
- * External check 4s
- * Database monitor 4s
- * HTTP agent 4s
- * SSH agent 4s
- * TELNET agent 4s
- * Script 4s

Custom intervals

Type	Interval
<input checked="" type="radio"/> Flexible <input type="radio"/> Scheduling	50s
Add	
Timeout 3s	Change Timeouts
* History storage period	<input type="radio"/> Do not keep history <input checked="" type="radio"/> Storage period 7d

Global

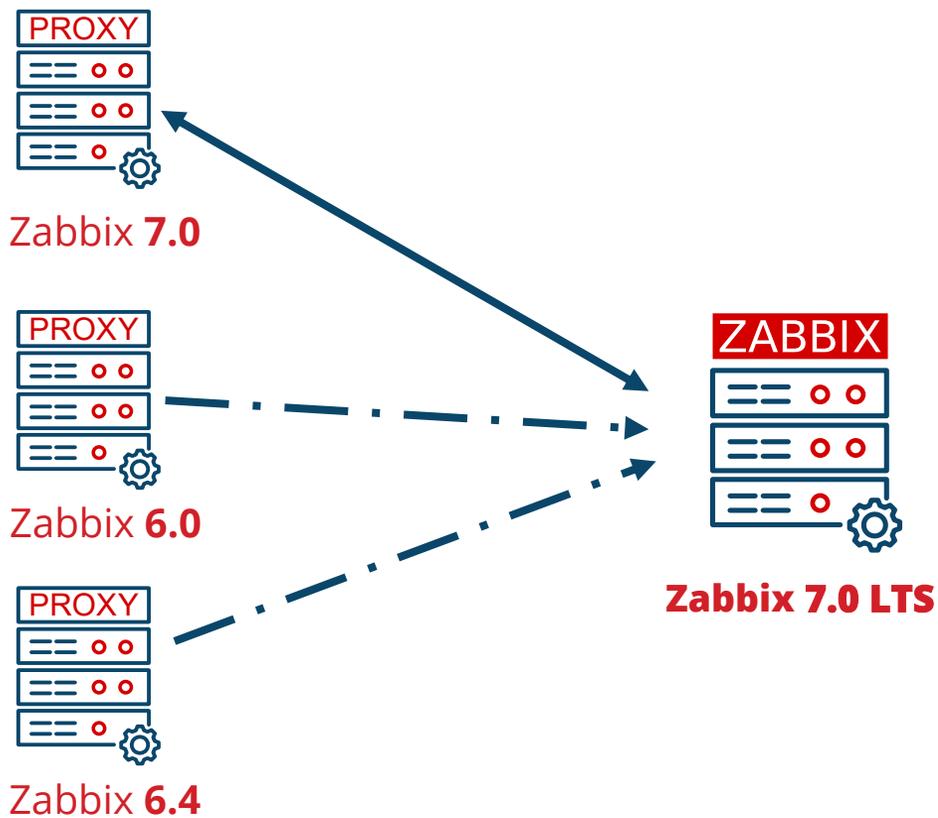
Proxy

Item

Global, proxy, and item-level timeouts managed from Zabbix UI

More secure - no need to deal with *.conf

Zero-downtime upgrade of proxies



<input type="checkbox"/>	Name ▲	Mode	Encryption	Version	Last seen (age)	Host count
<input type="checkbox"/>	proxy-dmz	Passive	PSK	6.4.0 <i>i</i>	0	153

Proxy version is outdated, only data collection and remote execution is available with server version 7.0.0.

Zabbix 6.4:

Older proxies will **continue to process data**

Creates a longer **time window** for upgrade

You can observe versions of your proxies in UI

Reducing operating costs

Network discovery

Auto-registration

Low-level discovery (LLD)

JIT user provisioning

and much more!

Reduce maintenance costs

Zero-downtime upgrade of proxies

Template versioning

Automatic up/down-scaling

Centralized management and SSO

A gentle learning curve, better UI/UX

Performance

Transition to threads

Perfect vertical and horizontal scalability

A more efficient history storage engine

Lower HW (CPU, memory, storage) requirements

Zabbix 6.0 LTS

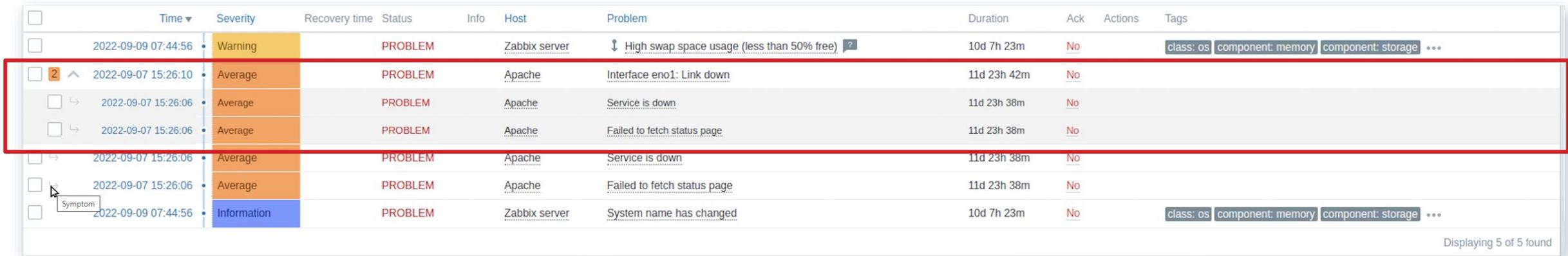
Zabbix 7.0 LTS

Zabbix 8.0 LTS

Complex event Processing

Root cause analysis and noise reduction

The concept of **cause** and **symptom** events



<input type="checkbox"/>	Time	Severity	Recovery time	Status	Info	Host	Problem	Duration	Ack	Actions	Tags
<input type="checkbox"/>	2022-09-09 07:44:56	Warning		PROBLEM		Zabbix server	↓ High swap space usage (less than 50% free) ?	10d 7h 23m	No		class: os component: memory component: storage ...
<input type="checkbox"/>	2022-09-07 15:26:10	Average		PROBLEM		Apache	Interface eno1: Link down	11d 23h 42m	No		
<input type="checkbox"/>	2022-09-07 15:26:06	Average		PROBLEM		Apache	Service is down	11d 23h 38m	No		
<input type="checkbox"/>	2022-09-07 15:26:06	Average		PROBLEM		Apache	Failed to fetch status page	11d 23h 38m	No		
<input type="checkbox"/>	2022-09-07 15:26:06	Average		PROBLEM		Apache	Service is down	11d 23h 38m	No		
<input type="checkbox"/>	2022-09-07 15:26:06	Average		PROBLEM		Apache	Failed to fetch status page	11d 23h 38m	No		
<input type="checkbox"/>	2022-09-09 07:44:56	Information		PROBLEM		Zabbix server	System name has changed	10d 7h 23m	No		class: os component: memory component: storage ...

Displaying 5 of 5 found

Classification of events: **cause** and **symptom**

Manual root-cause analysis

Advanced event correlation



Normalization and noise reduction

Tag-based event pre-processing

Time window filtering and de-duplication

Generation of new facts

Event correlation

Automatic classification of events

Root-cause analysis

Time and topology-based correlation

Complex event processing (CEP)

Basic event correlation

Cause and symptom events

Event correlation engine

Automatic root cause analysis

Event collection

Log management

Correlation based on topology data

Use of generative AI and ML for correlations

Collection of **third-party** events

Zabbix 6.0 LTS

Zabbix 7.0 LTS

Zabbix 8.0 LTS

Real-time data streaming and ingestion

Connectors and webhooks for real-time streaming and ingestion of metrics and events



Zabbix Server

Streaming of metrics and events

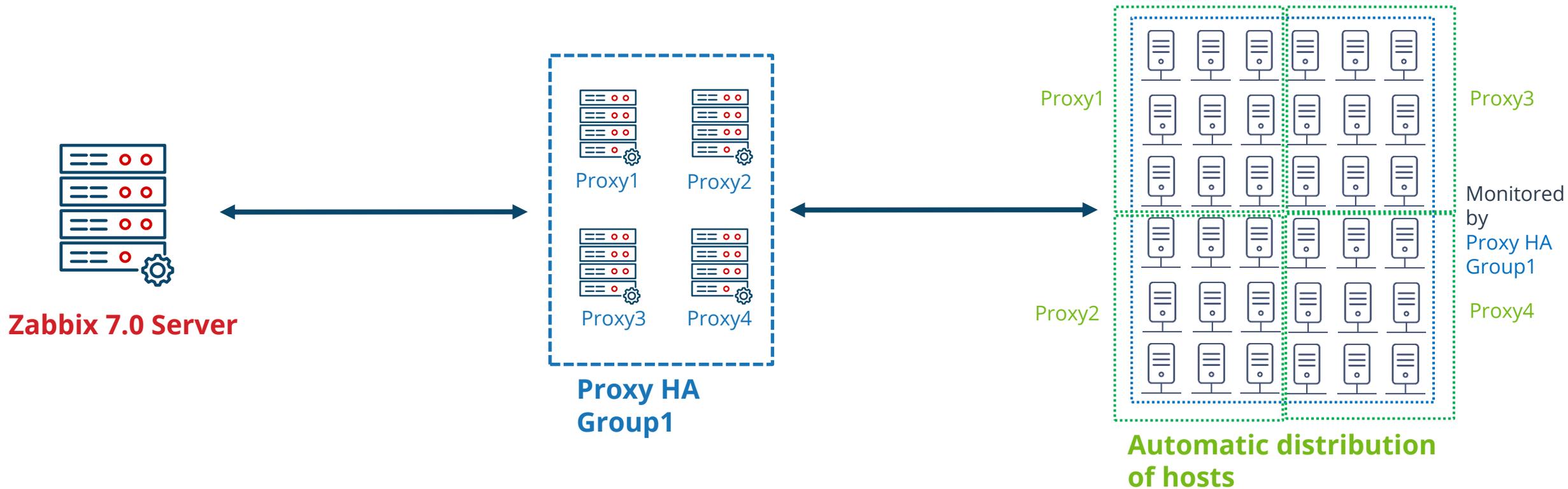


Ingestion of metrics

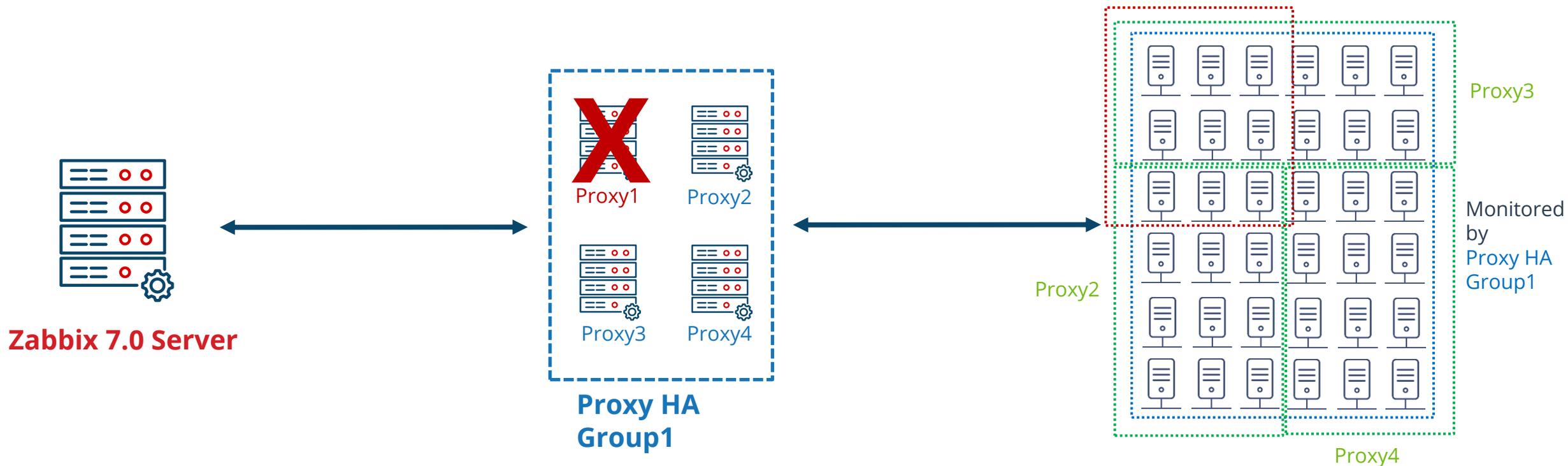


Zabbix Server

Proxy load balancing and HA



Proxy load balancing and HA



High availability of proxies

Load balancing: automatic distribution of hosts across a group of proxies

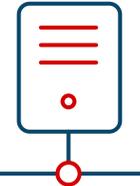
Auto-scaling of proxies in a K8S environment



Extremely adaptable

Solution for any use case

More ways to adapt and extend



Agent plugins, scripts

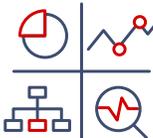
* Name

Protocol

Data type

* URL

Streaming data and events



Process any data types: events, tracing, logs, binary

- GUI
- Autoregistration
- Timeouts
- Images
- Icon mapping
- Regular expressions
- Trigger displaying options
- Geographical maps
- Modules
- Connectors
- Other

UI modules

Scope

Type

Scripts, manual and automatic actions



Custom UI

* Name

Protocol

Data type

Data ingestion

1:

2:

3:

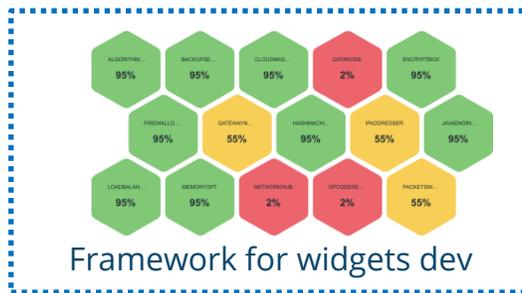
Pre-processing

Media type Options

* Name

Type

Webhooks



7.0 LTS

Dynamic dashboards

Data ingestion

Event correlation engine

Synthetic monitoring

Proxy load balancing

7.x

Next-generation visualization

Advanced event correlation

OpenTelemetry and tracing

Custom inventory

Custom UI

8.0 LTS

Ultimate observability platform

APM and compliance monitoring

Event and Log management

Use of AI and ML for advanced anomaly detection and operations

Management functions

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Thank you!

ALEXEI VLADISHEV

FOUNDER, CEO

