# Zabbix: current state and the future

# ZABBIX '23 CONFERENCE

JAPAN

Zabbix SIA

ALEXEI VLADISHEV FOUNDER, CEO

#ZabConfJp2023

Our mission



# 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

#### Single pane of glass for IT and OT

An ultimate monitoring and observability solution

Extremely adoptable for all possible use cases

ZABBIX 23

CONFERENCE

Lowest TCO

Superb visualization and reporting

Built-in ML and AI for anomaly detection and operations

Highly scalable (downscaling and upscaling)

ZABBIX '23 CONFERENCE

# Strategy





# Staying Open Source Inclusive solution

#### #ZabConfJp2023

### STEADY GROWTH

250+ Partners around the World



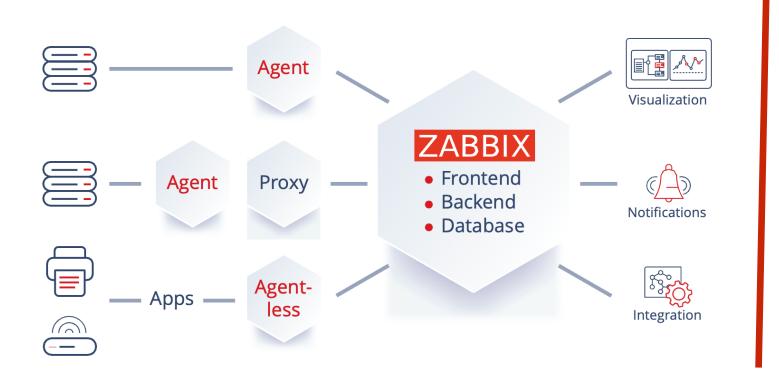




# All-in-one platform One product to cover it all



# Collect ---- Analyze ---- React & Visualize



High quality data, also for AlOps 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	.NET .NET	<b>1С:</b> Предприятие	Active Directory	ActiveMQ	Alcatel-Lucent 🕖 Enterprise Alcatel Lucent	Cloudstack	ClusterControl ClusterControl	Confluence	Cooling Cooling	Core OS	нттр	HTTPS HTTPS	Numeri Huawei
	Alerta Alerta	Android	A N S I B L E Ansible	Antivirus	Apache	Couchbase	cPanel cPanel	<b>D-Link</b> D-Link	Database monitoring	DATACOM Datacom	IBM AIX	<b>AS/400</b> IBM AS/400	IBM MQ IBM MQ
	APC APC	Appdynamics	Application monitoring	Arduino	ARISTA Arista	TEM BB2 DB2	Debian	Dell	DNS DNS	docter Docker	lngress	Intel	InterSystems Intersystems
	aruba Aruba	Asterisk	AVAYA Avaya	AWS	Le AWS CloudWatch	Drupal"	Elasticsearch	elex <sub>Eltex</sub>	DELLEMC EMC	Emerson Emerson	IRC IRC	<b>Jabber</b>	SasperReports
	AWS EC2	AWS S3	Backup	Bacula	Barracuda Barracuda	extm Exim	Extreme Extreme Networks	F5 Networks	Facebok Messenger	<b>F</b> edora	JBoss	Jenkins Jenkins	<b>ÜJIRA</b> Jira
	Bigpanda	Blue Coat	<b>bmc</b> Remedy BMC Remedy	Borg BorgBackup	BROCADE D	(2) firebird	Firewalls	<b>flowdock</b> Flowdock	FORTINET. Fortinet	FreeBSD	<b>julia</b> Julia	JUNIPEC. Juniper	<b>čč</b> Kafka
Applications Processes	<b>BUFFALD</b> . Buffalo	Bugzilla	<b>©</b> C#	Capacity planning Capacity planning	cassandra Cassandra	<b>7</b> FreshDesk	Fujitsu sevena SIEMENS Fujitsu Siemens	Galera cluster	G GECKOBOARD Geckoboard	<b>o git</b> <sub>Git</sub>	kubernetes Kubernetes	KVM	Kyocera
OS Environment	Centos	<mark>@ ceph</mark> <sub>Ceph</sub>	Check Point Check Point	Снег Chef	Chrome extension	Glassfish	<b>Glpi</b> GLPi	<b>Go</b>	Google Apps Google Apps	Google Cloud	Lenovo Lenovo	Lexmark®	Lighttpd
Hardware Industrial	Cisco	<b>CitRļX</b> * Citrix	Cloud Foundry	Cloud monitoring	<b>Cloudera</b>	<b>Coogle Maps</b>	Grafana	Graylog	Kara Hadoop	HAPROXY HAPROXY	Logstash	Lucidworks	LXC LXC
Network devices IoT and sensor data	28 Cloudstack	ClusterControl ClusterControl	<b>Confluence</b>	Cooling Cooling	Core OS CoreOS	High Availability High Availability	Q Hipchat	HITACHI Hitachi HDS, HNAS	HP Enterprise	MP-UX	Mattermost     Mattermost	Mellanox Mellanox	Memcached

#### zabbix.com/integrations

ZABBIX '23

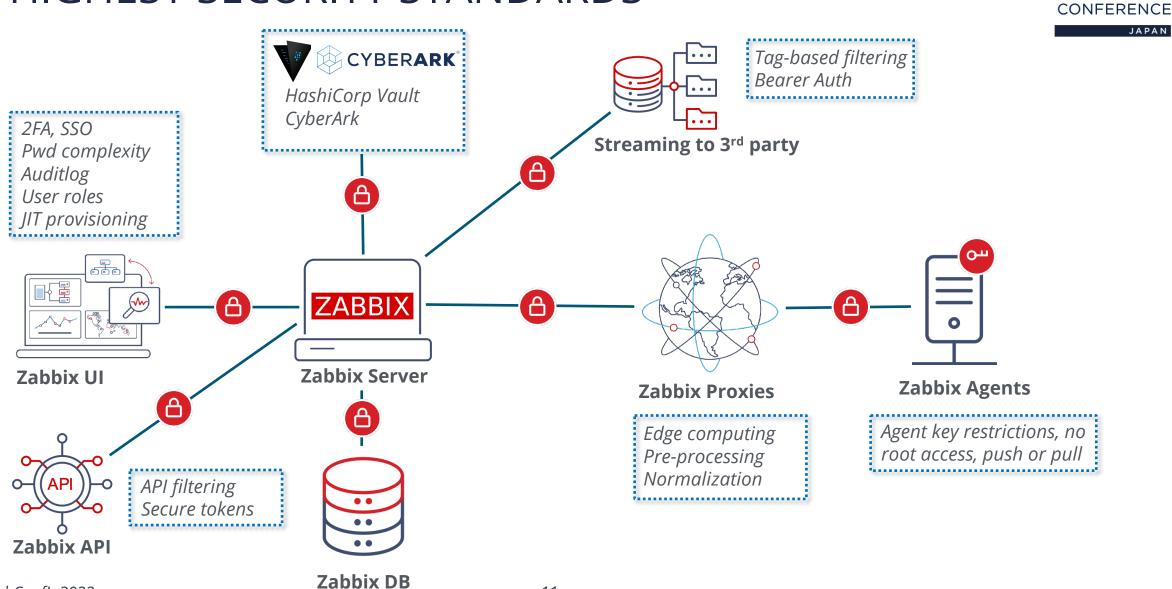
CONFERENCE

JAPAN



# Quality and security Top priority

# **HIGHEST SECURITY STANDARDS**

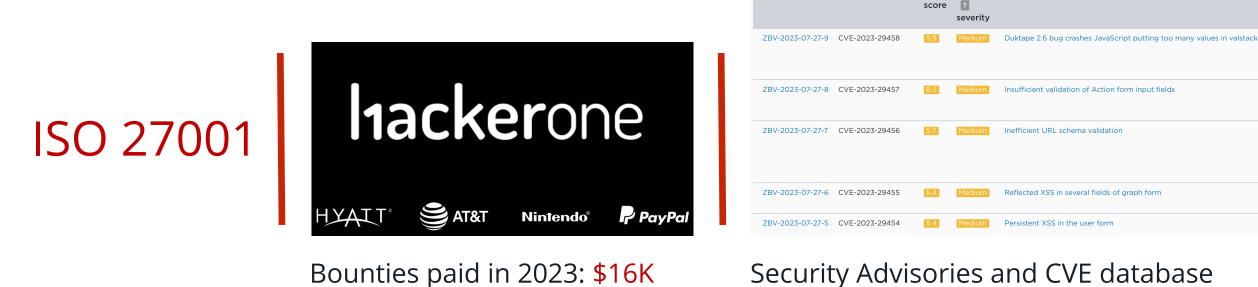


ZABBIX '23

JAPAN

## VERIFIED BY INDEPENDENT RESEARCHERS





Zabbix ID

CVE number

Security Advisories and CVE database

CVSS Zabbix

Synopsis



# Single pane of glass Total visibility and transparency

## VISUALIZATION AND REPORTING





#### Zabbix 7.0 LTS

All widgets for host and global dashboards and reporting

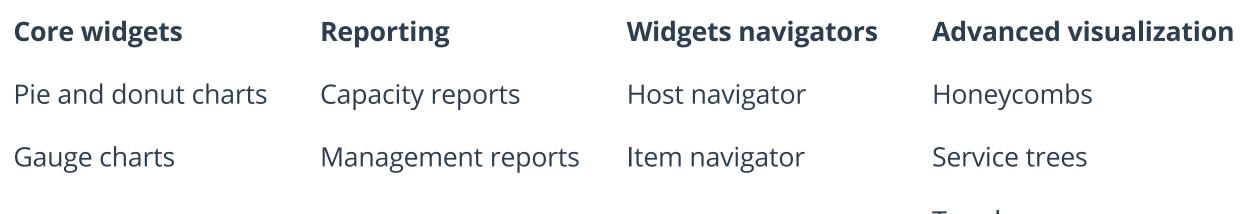
Stable framework for widget devs

New set of advanced widgets

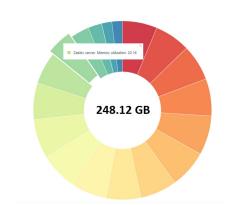
Dynamic dashboards for drill down and specific use cases

## **NEW WIDGETS** FOR REAL-TIME AND REPORTING









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





## 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



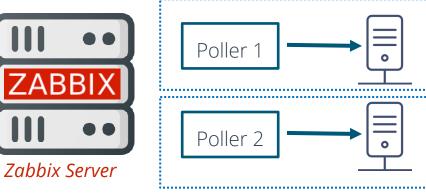


# Reducing operating costs It is not only about performance!



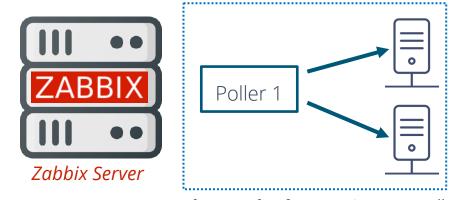
## **PERFORMANCE:** TRANSITION TO ASYNC AND THREADS

#### 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 thus lower cost and energy use Enables auto-scaling in the future

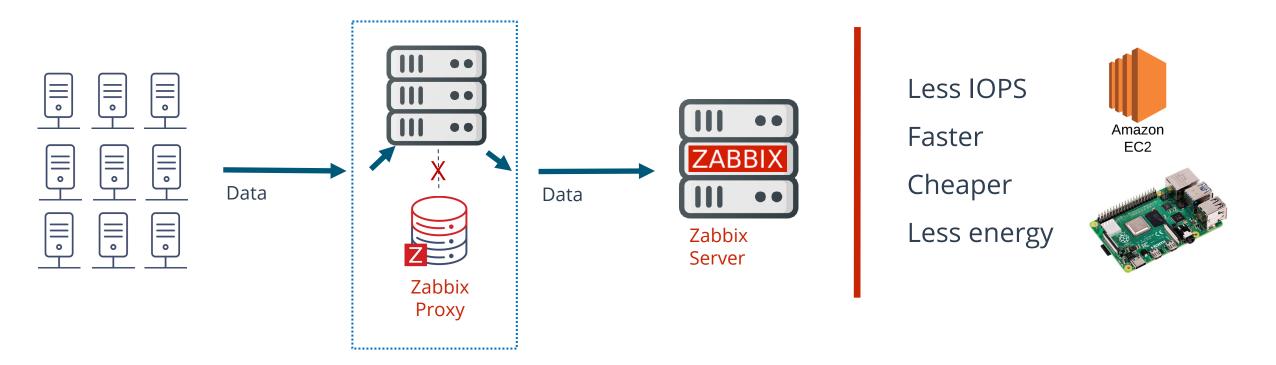


## **PERFORMANCE:** FASTER FRONT-END FOR LARGE SCALE



#### **10x faster** permission checks for non-superadmins

## **IN-MEMORY DATA COLLECTION MODE FOR PROXIES**



ZABBIX '23

CONFERENCE

JAPAN



## CENTRALISED MANAGEMENT OF ITEM TIMEOUTS

	Timeouts for item types							
	* Zabbix agent 4s							
	* Simple check 4s	Proxy Encryption	Fimeouts ●					
GUI	* SNMP agent 4s							
	* External check 4s	Timeouts for item types	Global Override Global timeouts					
Autoregistration	Database monitor     4s	* Zabbix agent	4s	Custo	m intervals	Turne		-1
Timeouts	* HTTP agent 4s			Cusio	in intervals	Туре	Interval	_
Images	* SSH agent 4s	* Simple check	4s			Flexible Scheduli	ng 50s	
	* TELNET agent 4s	* SNMP agent	4s			Add		
Icon mapping	* Script 4s							_
Regular expressions	Network timeouts for UI	* External check	45		Timeout	3s	Change Timeouts	-
Trigger displaying options	* Communication 3s	* Database monitor	4s		Innoout			
mgger displaying options	* Connection 3s	* HTTP agent	45	* History stor	age period	Do not keep history	Storage period 7d	
Geographical maps	* Media type test 65s							
Modules	* Script execution 60s	* SSH agent	4s					
	* Item test 60s	* TELNET agent	4s					
Connectors	* Scheduled report test 60s							
Other	Update Reset defaults	* Script	4s					
Global		Proxy		ltem				
GIUNUI		IIVAJ		item				

Global, Proxy and Item level timeouts managed from Zabbix UI

More secure: no need to deal with configuration files

#ZabConfJp2023

## **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

More efficient history storage engine

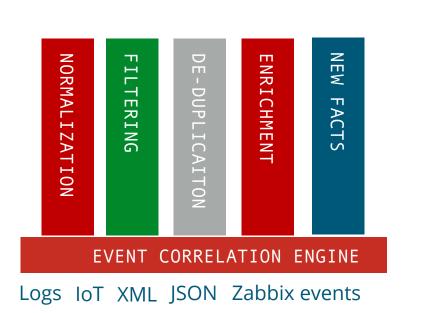
Lower HW (CPU, memory, storage) requirements





# Complex event processing Root cause analysis and noise reduction

## ADVANCED EVENT CORRELATION



#### Normalization and noise reduction

Tag based event pre-processing

Time window filtering & de-duplication

Generation of new facts

#### **Event correlation**

Automatic classification of events

Root-cause analysis

Time and topology-based correlation



## **REAL-TIME DATA STREAMING AND INGESTION**

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



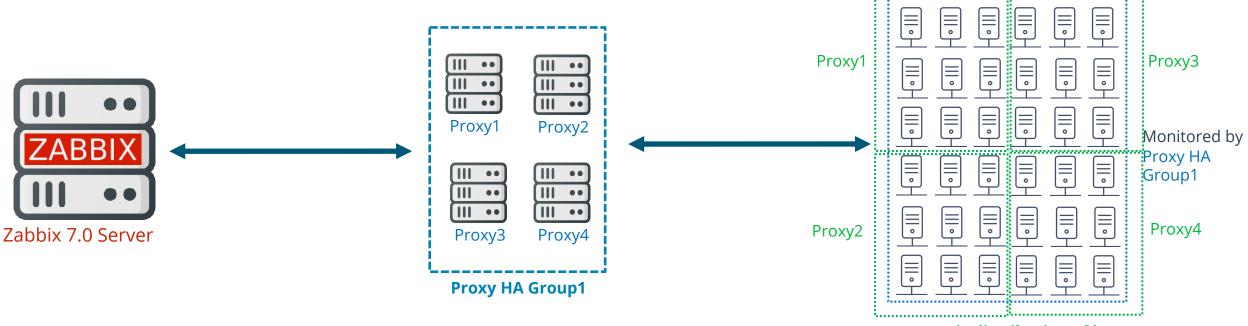
ZABBIX 23

CONFERENCE

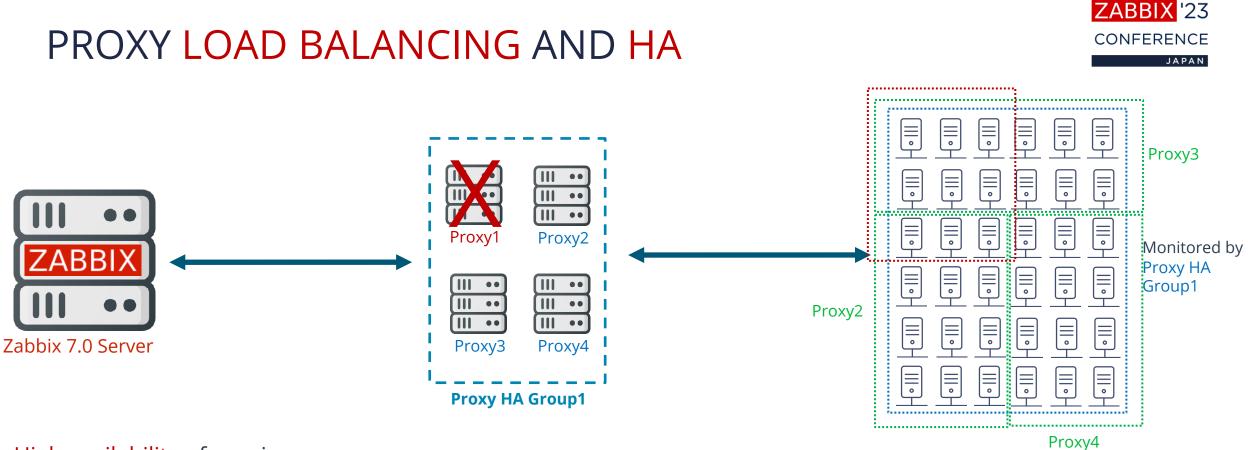
JAPAN

## PROXY LOAD BALANCING AND HA





Automatic distribution of hosts



High availability of proxies

Load balancing: automatic distribution of hosts accross group of proxies

Auto-scaling of proxies in K8S environment

#ZabConfJp2023



# Extremely adoptable Solution for any use case

## MORE WAYS TO ADOPT AND EXTEND



Agent plugins, scripts	Name Kafka Protocol Zabbix Streaming Protocol v1.0 Data type Item values Events     URL https://kafka.local/v1.0/	,	Process any data types: events, tracing, logs, binary
GUI Autoregistration Timeouts Images Icon mapping Regular expressions Trigger displaying options Geographical maps Modules Connectors Other	Streaming data and events         Scope       Action operation       Manual host action       Manual event action         Type       Webhook       Script       SSH       Telnet       IPMI         Scripts, manual and automatic actions	Custom UI	* Name Kafka Protocol Zabbix Streaming Protocol v1.0 Data type Item values Events Data ingestion
1: CSV to JSON       ~         2: JSONPath       ~         3: Regular expression       ~         Pre-processing	Media type Message templates 5 Options * Name Jira Type Webhook ~ Webhooks	with the second	NEW FACTS ENRICHMENT DE-DUPLICAITON FILTERING EVENT CORRELATION ENGINE

Zabbix 6.0 LTS

Zabbix 7.0 LTS

Zabbix 8.0 LTS



# 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

# Thank you!

# ZABBIX 23 CONFERENCE

JAPAN

#ZabConfJp2023