

# The Zabbix HA Story

Monitoring also needs high availability

Vittorio Cioe  
Presales Consultant – Zabbix  
[vittorio.cioe@zabbix.com](mailto:vittorio.cioe@zabbix.com)



## > whoami



**Two Decades in IT:** Getting my hands dirty with infrastructure, middlewares, databases and monitoring, long enough to remember when a “container” was just the payload of a cargo ship.



**Open Source and AI Enthusiast:** Spent my youth free time playing with (and breaking) Linux and other OSS tools. Lately exploring the wonderlands of AI.



**Now Presales Consultant @ Zabbix:** Translating technical requirements into architectures and helping teams extract maximum value from Zabbix.



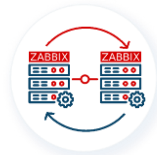
**Happy to be at Summit:** Here to have fun with together, exchange war stories, and convince you that “No HA – No party”.



# Agenda



Some Trivial Considerations



Zabbix Server HA



Zabbix Proxy Groups



Frontend and Database



The Full HA Picture



OCTOBER 7 ▪ 9, 2026  
RIGA ▪ LATVIA

# Some Trivial Considerations



## Some facts about **outages**

**96%**

Companies affected in  
the last 3 years

**18 h**

Average annual  
enterprise downtime

**80 min**

Mean Time To  
Resolution per outage

**51%**

Outages that could be  
avoided with HA

How much money  
did we lose?

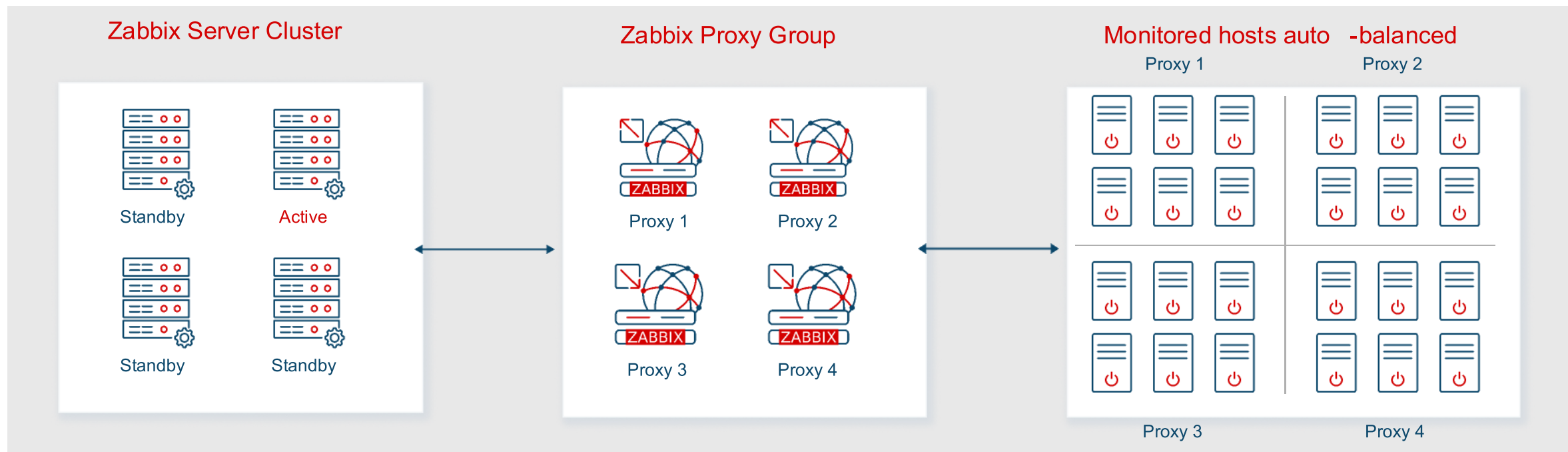
How long have we  
been blind?

How many  
incidents did we  
miss?

How much of that  
would monitoring  
HA have avoided?

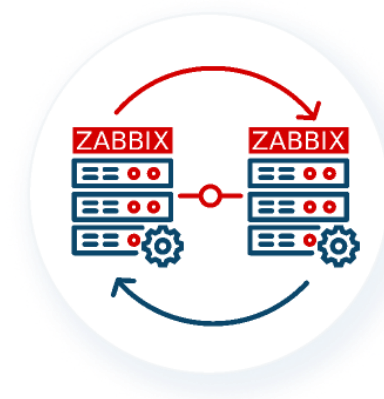
## Zabbix features **native HA**

- Active/passive Zabbix server HA cluster (since Zabbix 6.0)
- Zabbix proxy groups (since Zabbix 7.0)



## Design considerations for **Zabbix HA** (...or any HA!)

- Document everything as much as possible
- Prepare the network: ensure consistent DNS naming, firewall rules, routing
- Divide the components: place Frontend, Server and Database components in separate servers
- Avoid resource bottlenecks: ensure the servers will “fish” from separate physical resources
- Ensure physical resources are also highly-available
- Better to have a test environment



Note: How many servers do I need to deploy?

Note: Am I looking for HA or DR?

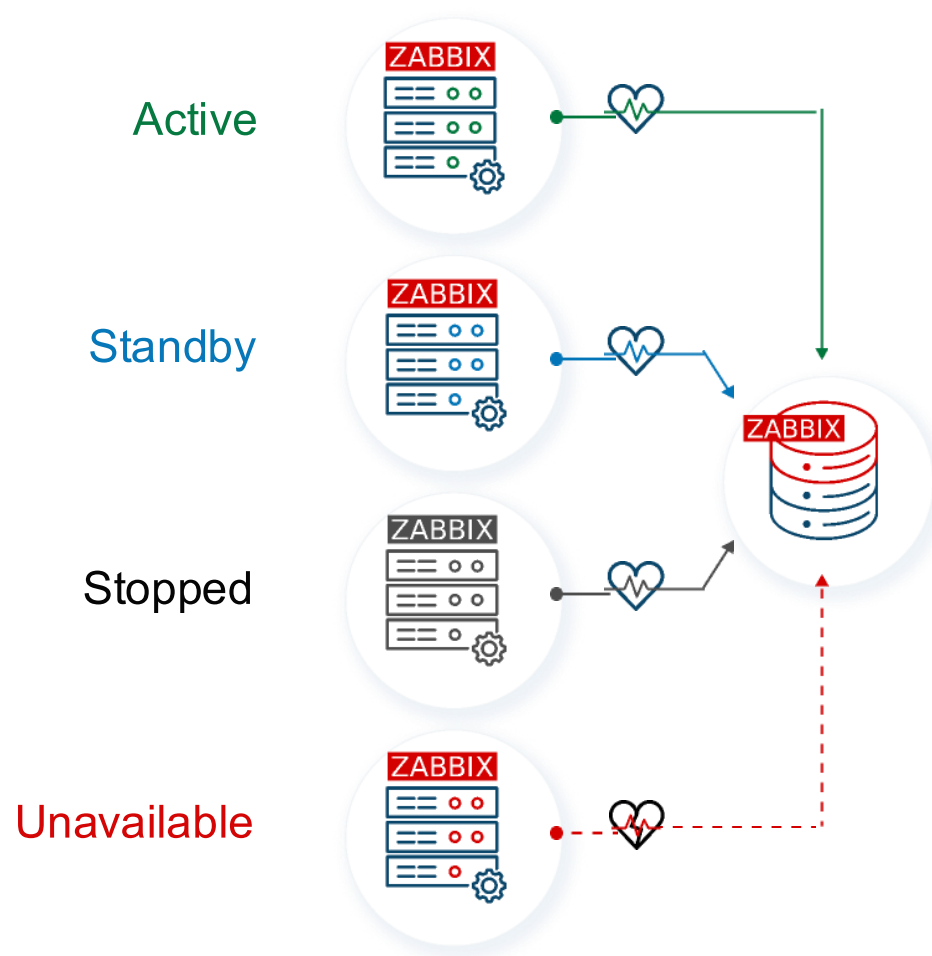
Note: HA over two DCs brings in additional considerations.

# The Zabbix Server HA



## Zabbix Server HA: How it Works

- All Zabbix servers use the same DB
- Zabbix servers update their last access time every 5 seconds
- Zabbix frontend will autodetect the active node from the Zabbix database
- Only one Zabbix server node can be active at the same time
- Other Zabbix server nodes can be in one of the following states:
  - standby
  - unavailable
  - stopped



## Zabbix Server HA: **How to Configure**

Install additional zabbix-servers and set 2 configuration parameters:

- HANodeName
- NodeAddress

On the frontend config, comment out `//$ZBX_SERVER` and `//$ZBX_SERVER_PORT`

Zabbix server instance: **Active**



HANodeName=ZABBIX-SERVER-HA01  
NodeAddress=zbx-node-01:10051

Zabbix server instance: **Standby**



HANodeName=ZABBIX-SERVER-HA02  
NodeAddress=zbx-node-02:10051

| Name               | Address           | Last access | Status  |
|--------------------|-------------------|-------------|---------|
| ZABBIX-SERVER-HA01 | zbx-node-01:10051 | 1s          | Active  |
| ZABBIX-SERVER-HA02 | zbx-node-02:10051 | 2s          | Standby |

## Zabbix Server HA: **How to Manage**

Use CLI runtime commands to configure Zabbix server HA parameters

- Check the status of the Zabbix server HA:

```
# zabbix_server -R ha_status
```

- Set a different failover period (from 10 seconds and 15 minutes):

```
# zabbix_server -R ha_set_failover_delay=5m
```

- Remove HA nodes (active/standby nodes cannot be removed; first, stop the nodes and then remove them):

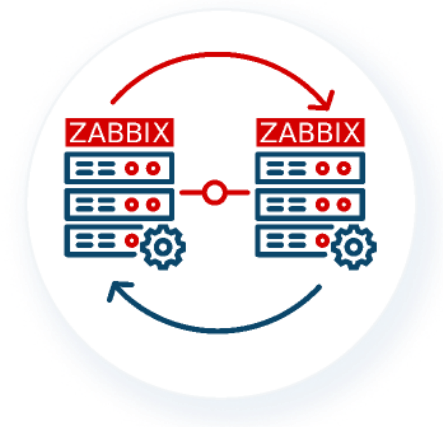
```
# zabbix_server -R ha_remove_node=ZABBIX-SERVER-HA02
```



Note: To stop the cluster entirely, first stop the standby nodes and then the primary.

## Zabbix Server HA: **Benefits**

- **Officially supported by vendor** and documented
- **Native solution** for high-availability
- Fast and **automated failover**
- **No expertise** in HA required
- Supports **redundancy** with multiple nodes
- Can be **easily configured** and also disabled
- **Zero downtime** upgrades



# Zabbix Proxy Groups



## Zabbix Proxy Groups: **Features**



- Zabbix Proxy standalone: Horizontal scalability (but single point of failure)
- Natively provides automatic Proxy high availability
- Natively provides automatic load balancing

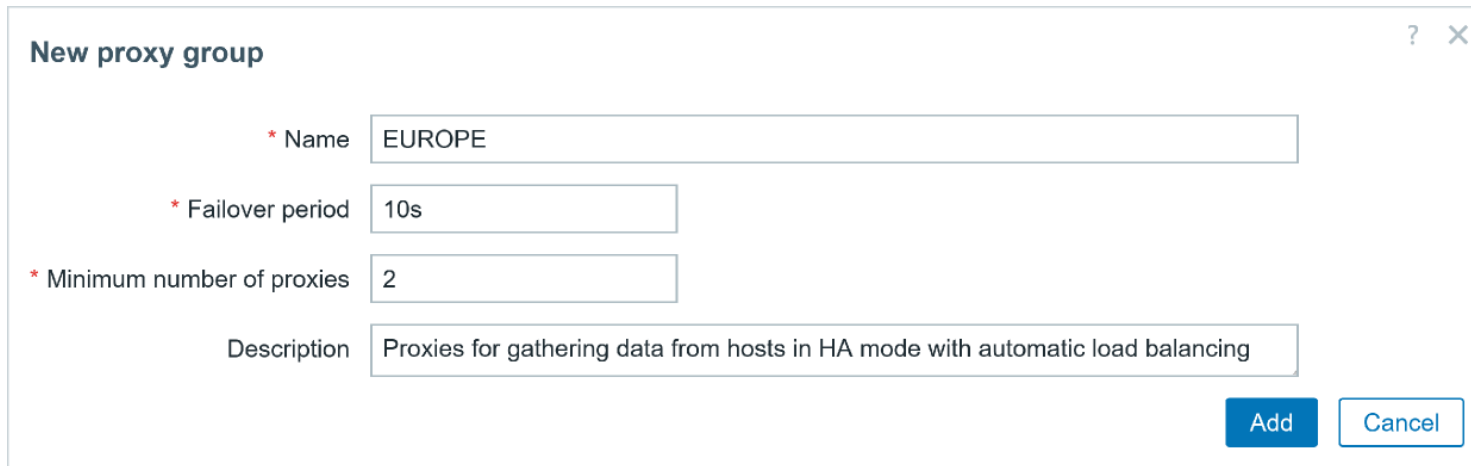
| <input type="checkbox"/> Name ▲ | State  | Failover period | Online proxies | Minimum proxies | Proxies                                            |
|---------------------------------|--------|-----------------|----------------|-----------------|----------------------------------------------------|
| <input type="checkbox"/> EUROPE | Online | 10s             | 4              | 2               | 4 EAST proxy, NORTH proxy, SOUTH proxy, WEST proxy |

- Configure in Frontend
- Can add existing proxies or new proxies to the group
- Can add as many proxies to the proxy group as needed

Note: Proxy can be assigned to only one proxy group!  
Beware! SNMP traps not supported by proxy group!🔔

## Zabbix Proxy Groups: Configuration

- Create a proxy group in Frontend
- Set proxy group name
- Set the Online Minimum Number of proxies for the group to be online
- Set the failover period (10s to 15 min)



New proxy group

\* Name

\* Failover period

\* Minimum number of proxies

Description

Add Cancel

Note: The minimum number of online proxies should be less than the proxy total in the group

## Zabbix Proxy Groups: **Load Balancing**

Automatic load balancing (after 10x times the failover period):

- Host monitored by proxy - No Rebalancing and HA



Host IPMI Tags Macros Inventory Encryption Value mapping

Monitored by Server Proxy Proxy group

SOUTH proxy X Select

Enabled ☒

Host monitored by proxy group - Rebalancing and HA

Host IPMI Tags Macros Inventory Encryption Value mapping

Monitored by Server Proxy Proxy group

EUROPE X Select

Enabled ☒

Assigned proxy SOUTH proxy

**Attention: Hosts monitored by a single proxy (even if it belongs to a proxy group) are not involved in load balancing/high availability.**

## Zabbix Proxy Groups: Load Balancing



- Automatic load balancing:  
Based on the number of hosts (not NVPS)
- Rebalancing will be performed when:
  - **The difference is a factor of 2 and**
  - **The difference is 10 or more hosts from the group's average host count**

| <input type="checkbox"/> Name                                            | Mode   | Encryption | State  | Version | Last seen (age) ▲ | Item count | Required vps | Hosts                                                  |
|--------------------------------------------------------------------------|--------|------------|--------|---------|-------------------|------------|--------------|--------------------------------------------------------|
| <input type="checkbox"/> SOUTH AMERICA: <a href="#">Primary proxy</a>    | Active | None       | Online | 7.4.0   | 6s                | 172        | 2.29         | 4 <a href="#">Argentina, Brazil, Guyana, Venezuela</a> |
| <input type="checkbox"/> SOUTH AMERICA: <a href="#">Secondary proxy</a>  | Active | None       | Online | 7.4.0   | 6s                | 129        | 1.72         | 3 <a href="#">Chile, Colombia, Paraguay</a>            |
| <input type="checkbox"/> SOUTH AMERICA: <a href="#">Tertiary proxy</a>   | Active | None       | Online | 7.4.0   | 6s                | 43         | 0.57         | 1 <a href="#">Bolivia</a>                              |
| <input type="checkbox"/> SOUTH AMERICA: <a href="#">Quaternary proxy</a> | Active | None       | Online | 7.4.0   | 6s                | 43         | 0.57         | 1 <a href="#">Ecuador</a>                              |

Attention: Having fewer than 10 hosts assigned to a proxy group may lead to uneven host distribution among proxies in the group

## Zabbix Proxy Groups: **Offline**

When proxy group goes **offline**:

- No HA will be performed for the proxy group
- No load balancing will be performed for the proxy group
- Online proxies will still gather and send the data

|                                                                        |                                                                                                                        |                                                                                                                         |                                                                                                                           |                                                                                                                          |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Proxy Group:<br><b>EUROPE</b> <span>Online</span><br>min . proxies: 2  |  EAST proxy<br><span>Online</span>    |  NORTH proxy<br><span>Online</span>    |  South proxy<br><span>Online</span>    |  WEST proxy<br><span>Online</span>    |
| Proxy Group:<br><b>EUROPE</b> <span>Online</span><br>min . proxies: 2  |  EAST proxy<br><span>Online</span>    |  NORTH proxy<br><span>Online</span>    |  South proxy<br><span>Online</span>    |  WEST proxy<br><span>Offline</span>   |
| Proxy Group:<br><b>EUROPE</b> <span>Online</span><br>min . proxies: 2  |  EAST proxy<br><span>Online</span>   |  NORTH proxy<br><span>Online</span>   |  South proxy<br><span>Offline</span>  |  WEST proxy<br><span>Offline</span>  |
| Proxy Group:<br><b>EUROPE</b> <span>Offline</span><br>min . proxies: 2 |  EAST proxy<br><span>Online</span>  |  NORTH proxy<br><span>Offline</span> |  South proxy<br><span>Offline</span> |  WEST proxy<br><span>Offline</span> |
| Proxy Group:<br><b>EUROPE</b> <span>Offline</span><br>min . proxies: 2 |  EAST proxy<br><span>Offline</span> |  NORTH proxy<br><span>Offline</span> |  South proxy<br><span>Offline</span> |  WEST proxy<br><span>Offline</span> |

# Zabbix Proxy Groups: **Benefits**



## **Infrastructure growth**

- Shift load from Zabbix server to proxies in proxy groups)
  - Automatic high availability
  - Automatic load balancing
  - Simplified configuration and management
  - Scale up proxies as needed



## **Monitoring performance increase** for short, high intensity events

- Monitor rented HaaS or SaaS for:
  - Conferences
  - Seasonal retail sales spikes
  - Festivals



## **Scale out dynamically** with assurances of continued monitoring:

- Collect data from office branches or franchises

# Frontend and database



# High Availability for **Zabbix Frontend**

## **Zabbix Frontend HA is easy to achieve:**

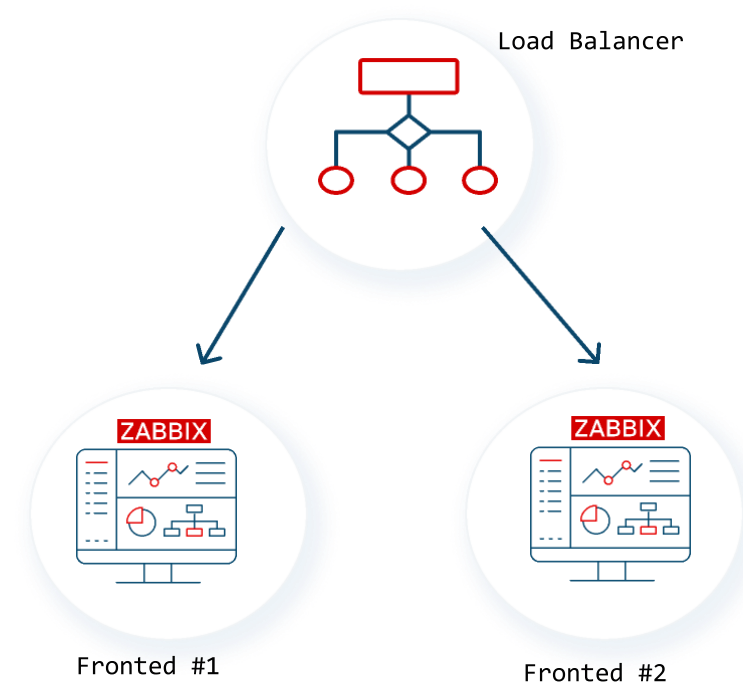
- No clustering needed, just multiple instances
- No failover needed, just switchover
- Load balance
- All the data are in the database (including session data)

## **Most common solutions:**

- DNS Round-Robin (with stickiness)
- Multiple Frontend instances with Virtual IP
- Load Balancer (consider sticky sessions)

## **Good to remember:**

- Keep configuration files consistent across instances



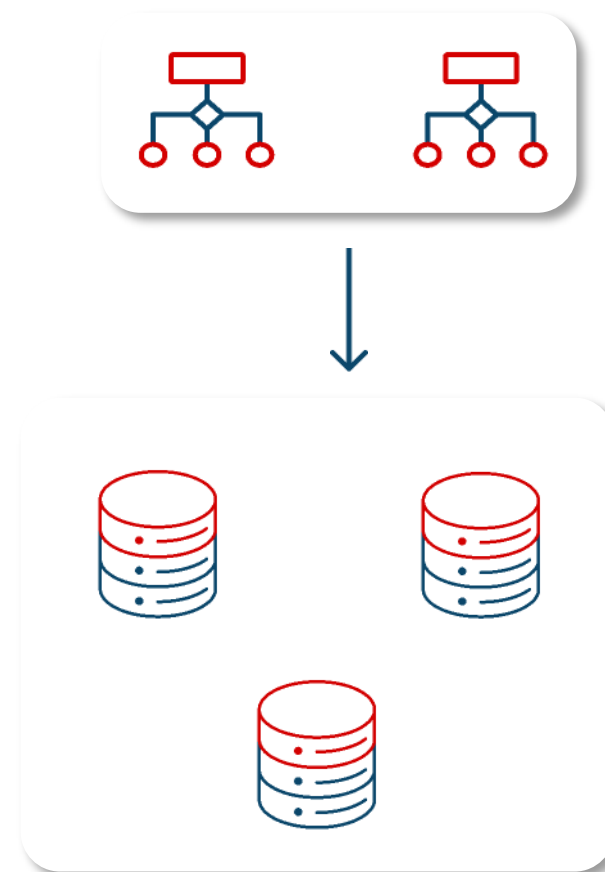
## Database HA: Considerations

### Zabbix Server HA is based on database:

- "Active and standby nodes update their last access time every 5 seconds"
- Database HA is key for sever database

### Multiple HA Options for Supported DB solutions:

- MySQL/MariaDB → InnoDB/Galera Cluster
- PostgreSQL/TimescaleDB → Patroni
- **New in 8.0!** ClickHouse → Standby nodes
- **New in 8.0!** Elastic Search → Node/Zone level HA
- **New in 8.0 !** PostgreSQL → DBHost accepts comma separated list



Note: Choose what you know the most

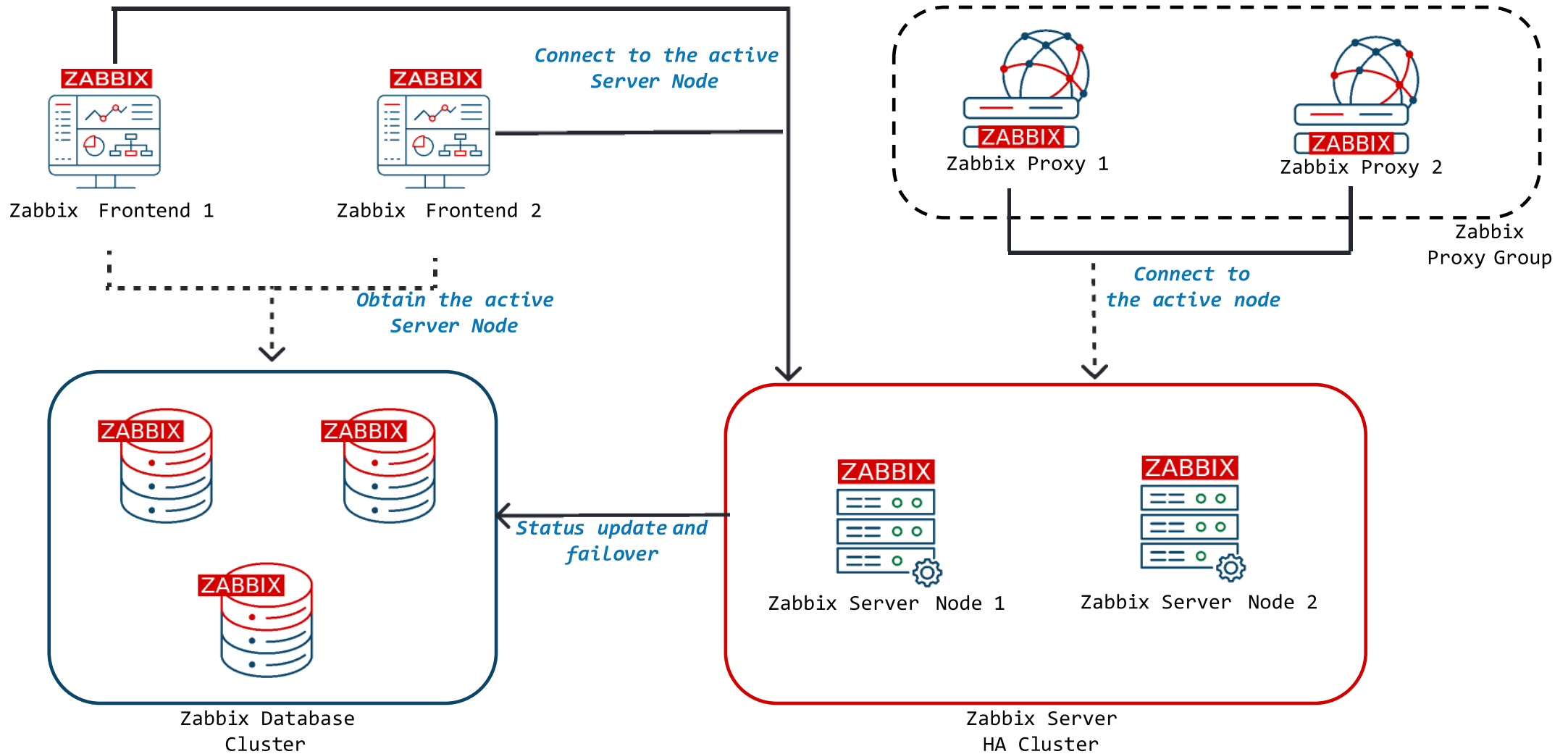
Note: Replication is **NOT** High Availability! (PostgreSQL DBHost in 8.0 helps)

Note: Quorum based HA over two DCs is dangerous!

# The Full HA Picture



# Comprehensive HA Architecture



# Questions?

# Thank you!

