Opensource ICT Solutions

ZABBIX

BeNeLux conference 2023

Zabbix in an MSP environment

Whoami

Brian van Baekel

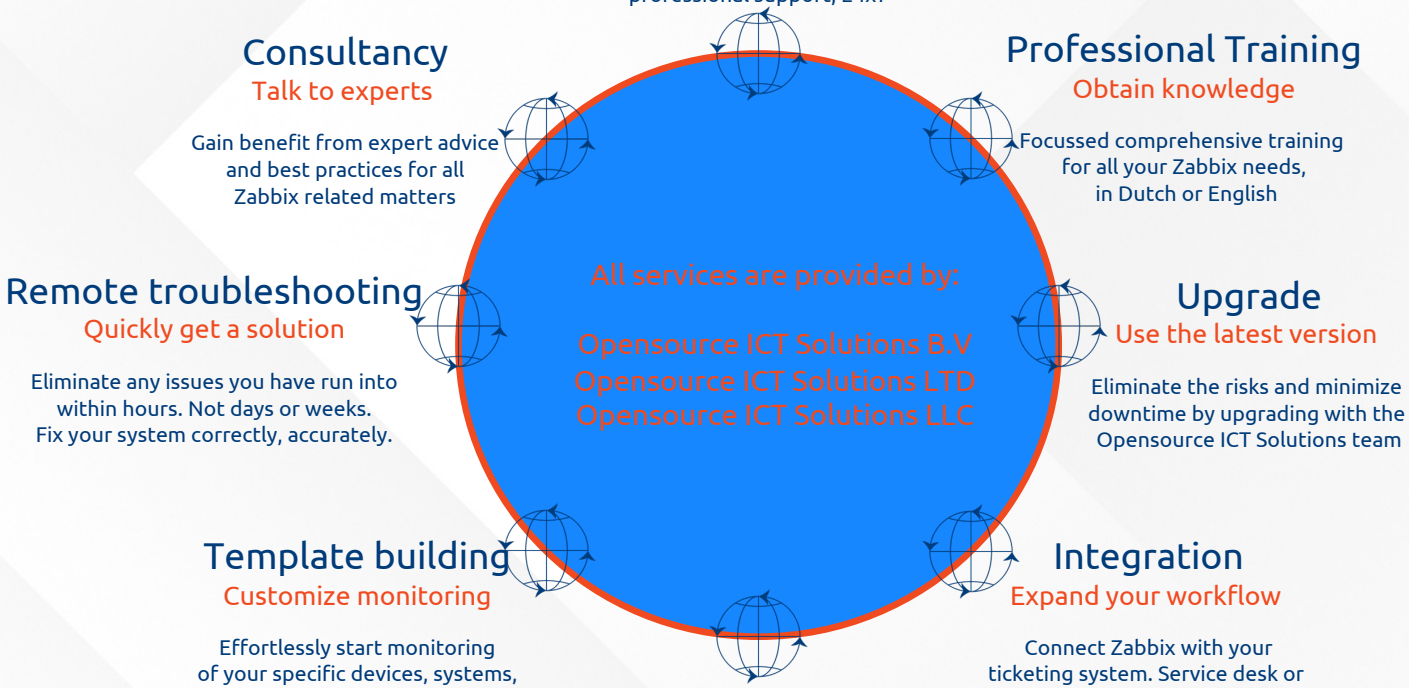
Zabbix trainer / Consultant

Opensource ICT Solutions

Your Zabbix partner in:

- The Netherlands
- United Kingdom
- United States

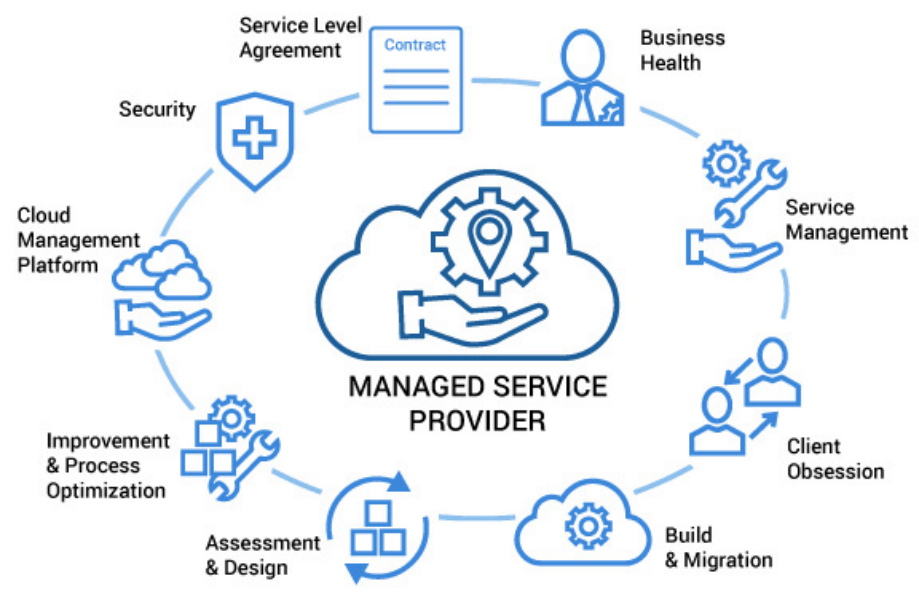
Services overview



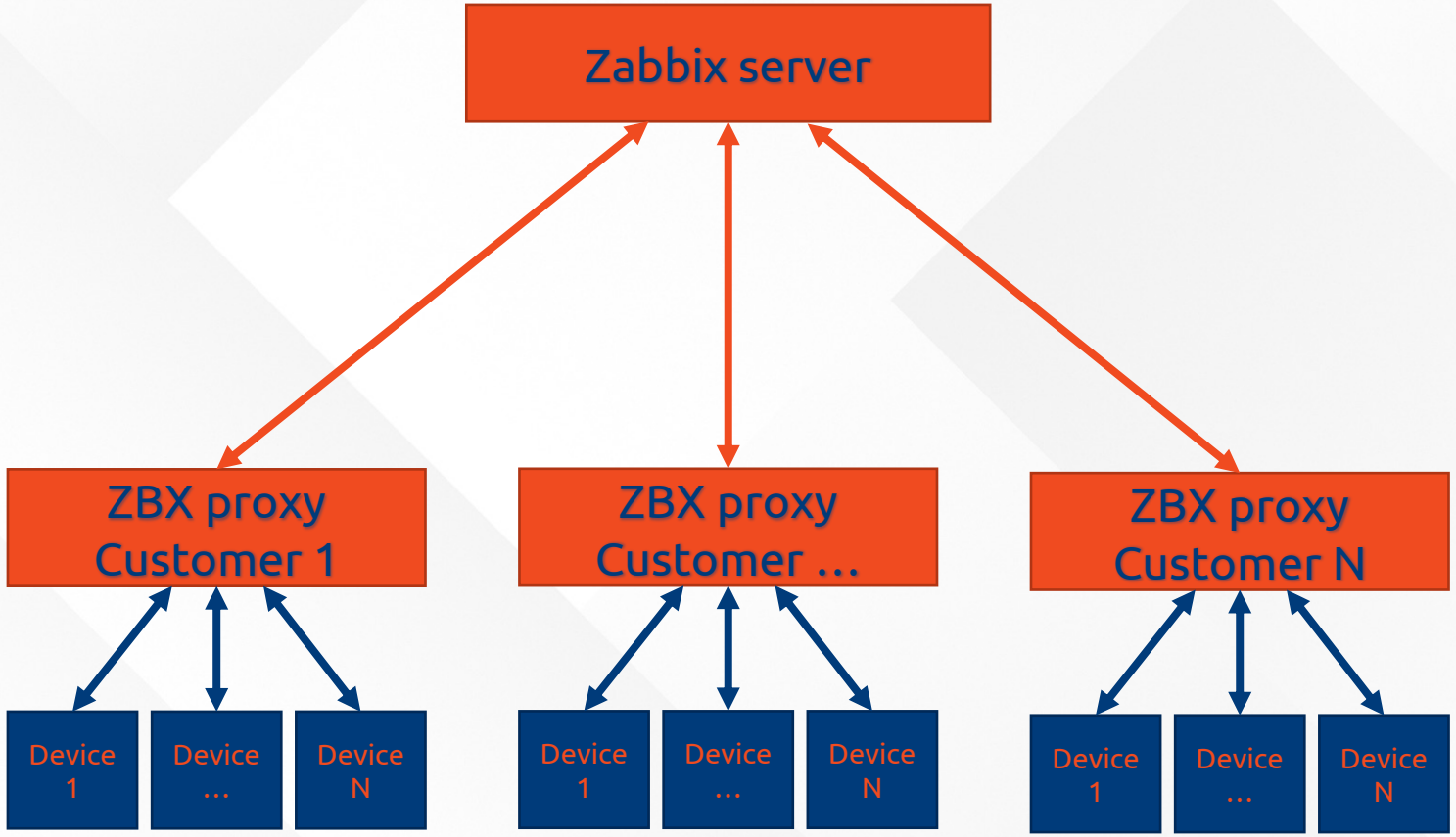
https://oicts.com

What are we going to discuss?

- Zabbix in an Managed Services Provider setup



Typical setup



Benefits

- Why use Zabbix?
  - Cost effective
  - Flexible
  - Extendable
- Consideration:
  - A single instance (global)
  - Many small ones (one per customer)

Benefits - manageability

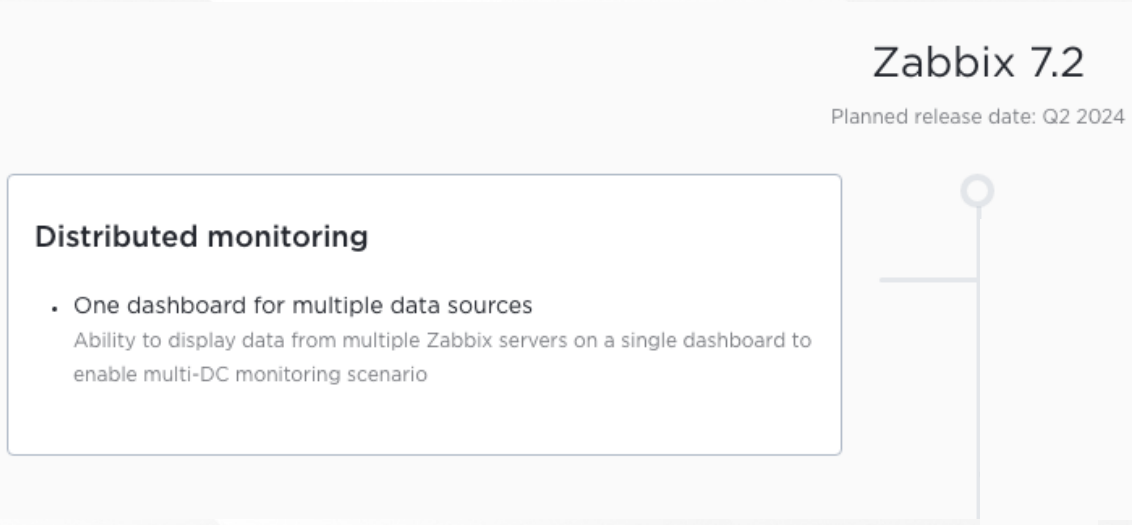
- One instance
  - Easy to manage
  - License costs (OS, DB etc)
  - Upgrade: just 1 component (but higher impact)

Benefits - manageability

- Many instances
  - Each instance is smaller -> less performance tuning needed
  - Upgrade: many small upgrades, with smaller impact per upgrade

Benefits – single pane of glass

- Single server: One view to see them all
- Many servers: “impossible” without custom coding or Grafana
  - But still: consistency is possible/easy

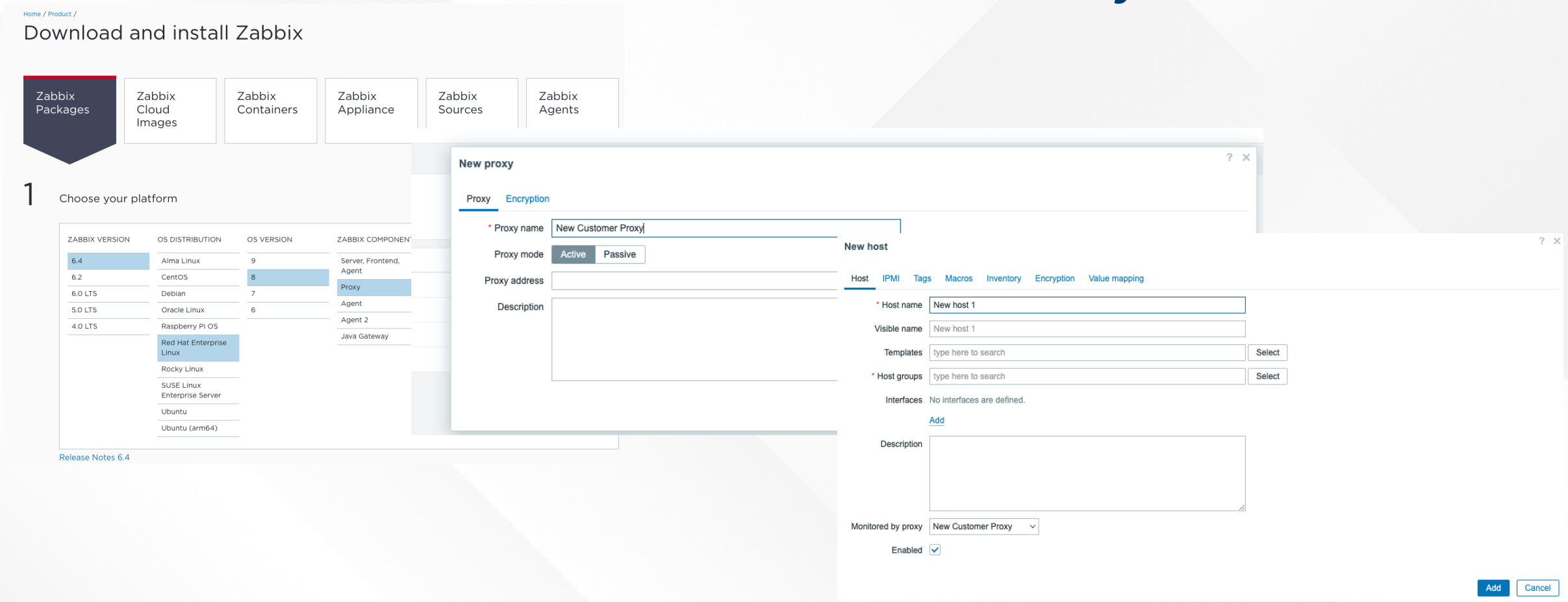


Benefits - uniformity

- Uniformal configuration
  - Templates, naming conventions etc.
- Uniformal monitoring
  - When using templates, the monitoring is always consistent between various systems
- Uniformal alerting
  - Setup a structure once and Copy/Paste it for every customer

Benefits – quicker deployments

- Enroll a new customer in minutes rather than days



Benefits - automation

- Integration with
  - CMDB?
  - Ticketing?
  - Authentication?
- API calls are available

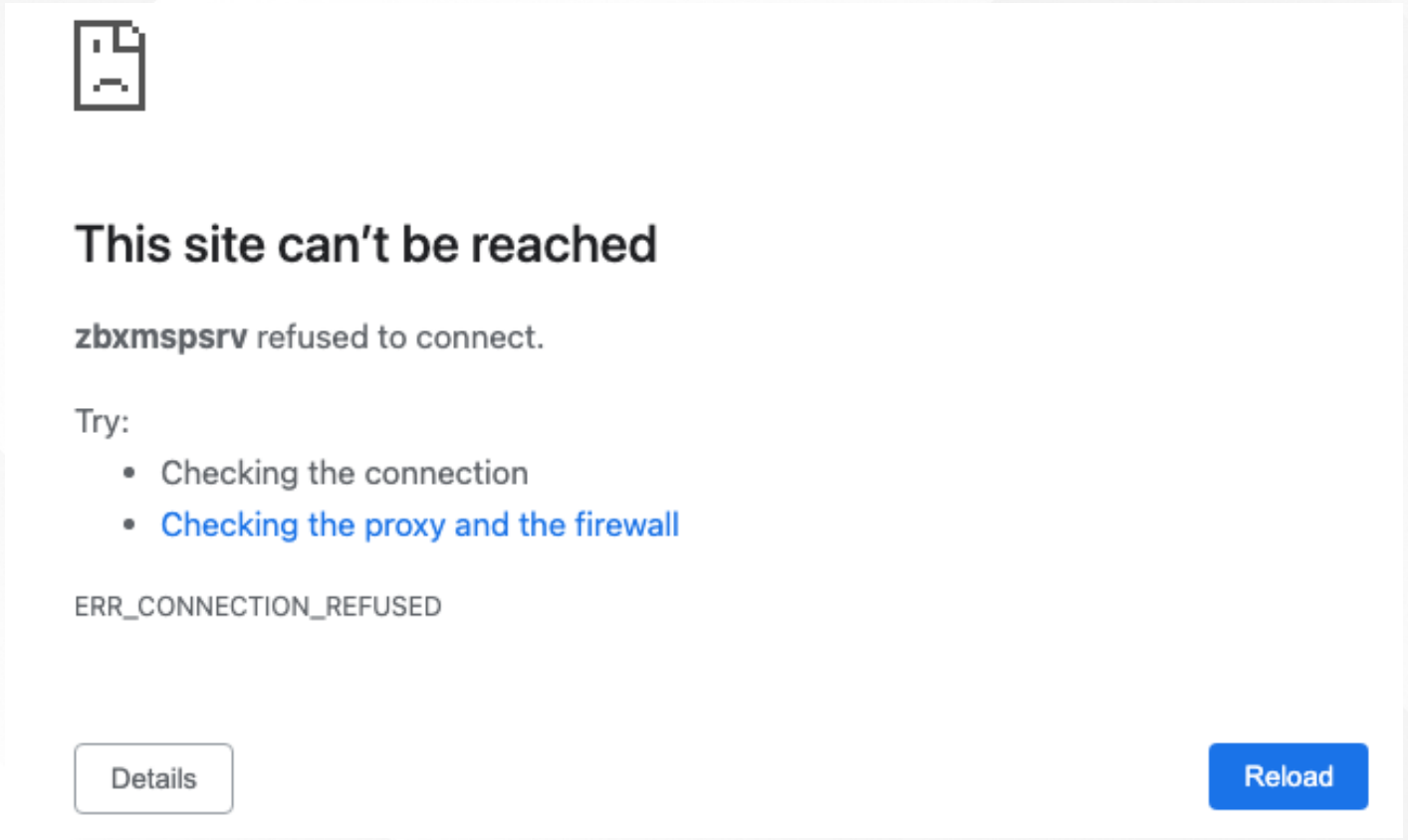
```
{
    "jsonrpc": "2.0",
    "method": "host.create",
    "params": {
        "host": "Linux server",
        "interfaces": [
            {
                "type": 1,
                "main": 1,
                "useip": 1,
                "ip": "192.168.3.1",
                "dns": "",
                "port": "10050"
            }
        ],
        "groups": [
            {
                "groupid": "50"
            }
        ],
        "tags": [
            {
                "tag": "Host name",
                "value": "Linux server"
            }
        ],
        "templates": [
            {
                "templateid": "20045"
            }
        ],
        "macros": [
            {
                "macro": "{$USER_ID}",
                "value": "123321"
            },
            {
                "macro": "{$USER_LOCATION}",
                "value": "0:0:0",
                "description": "latitude, longitude and altitude coordinates"
            }
        ],
        "inventory_mode": 0,
        "inventory": {
            "macaddress_a": "01234",
            "macaddress_b": "56768"
        }
    },
    "id": 1
}
```

Drawbacks

- Yes, there are drawbacks. Of course there are

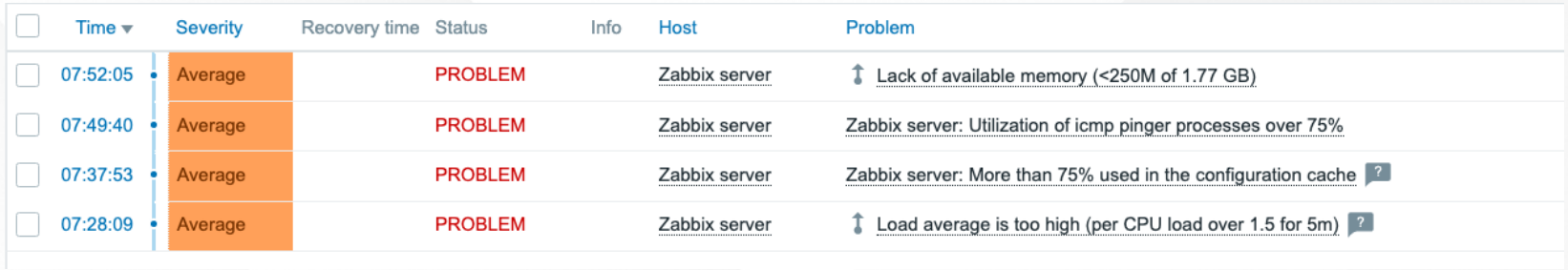
Drawbacks - Downtime

- Zabbix down? You are blind.



Drawbacks - growing

- How to scale your instance?



Time	Severity	Recovery time	Status	Info	Host	Problem
07:52:05	Average		PROBLEM		Zabbix server	Lack of available memory (<250M of 1.77 GB)
07:49:40	Average		PROBLEM		Zabbix server	Zabbix server: Utilization of icmp pinger processes over 75%
07:37:53	Average		PROBLEM		Zabbix server	Zabbix server: More than 75% used in the configuration cache
07:28:09	Average		PROBLEM		Zabbix server	Load average is too high (per CPU load over 1.5 for 5m)

And so it begins…

Drawbacks - growing

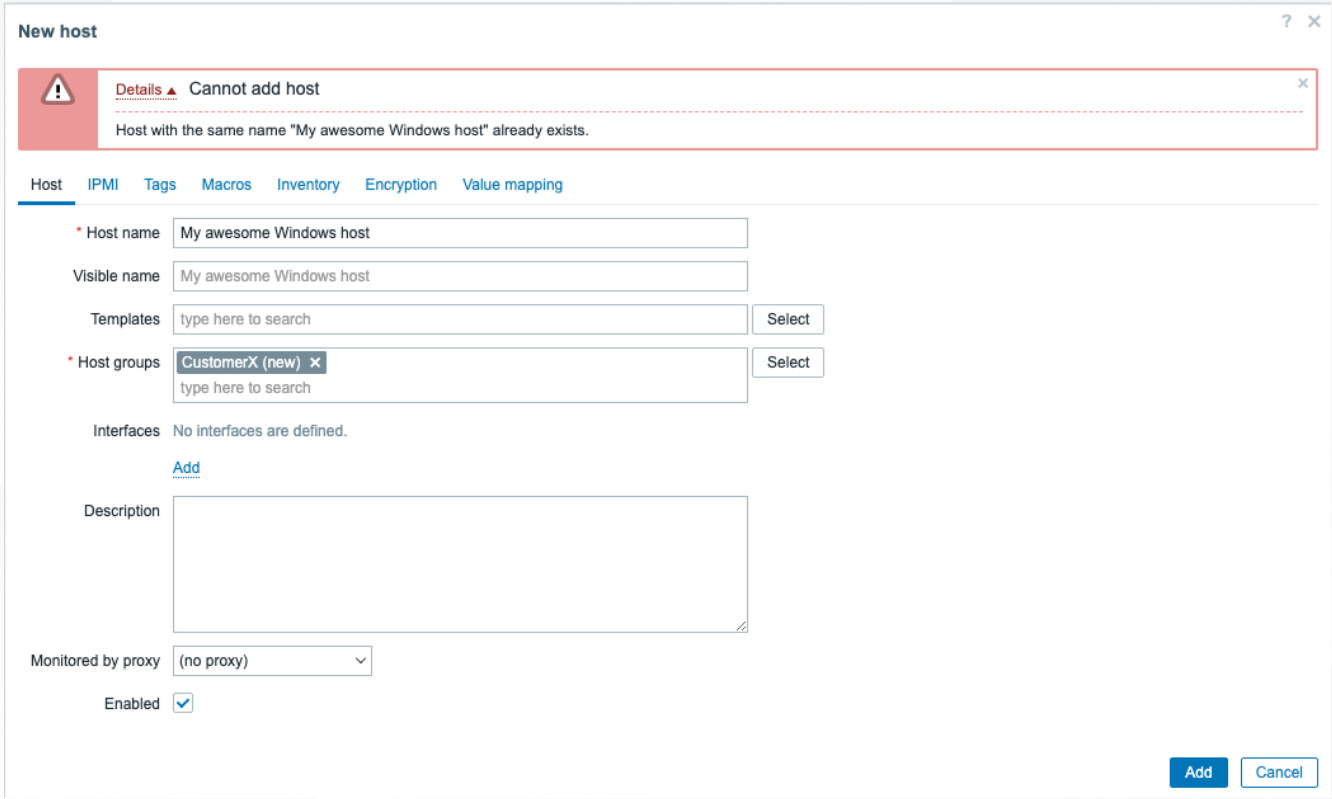
- How many hosts? How many items? Update interval? History storage period? Trends? Expansion?

Considerations

- What to think about before starting?

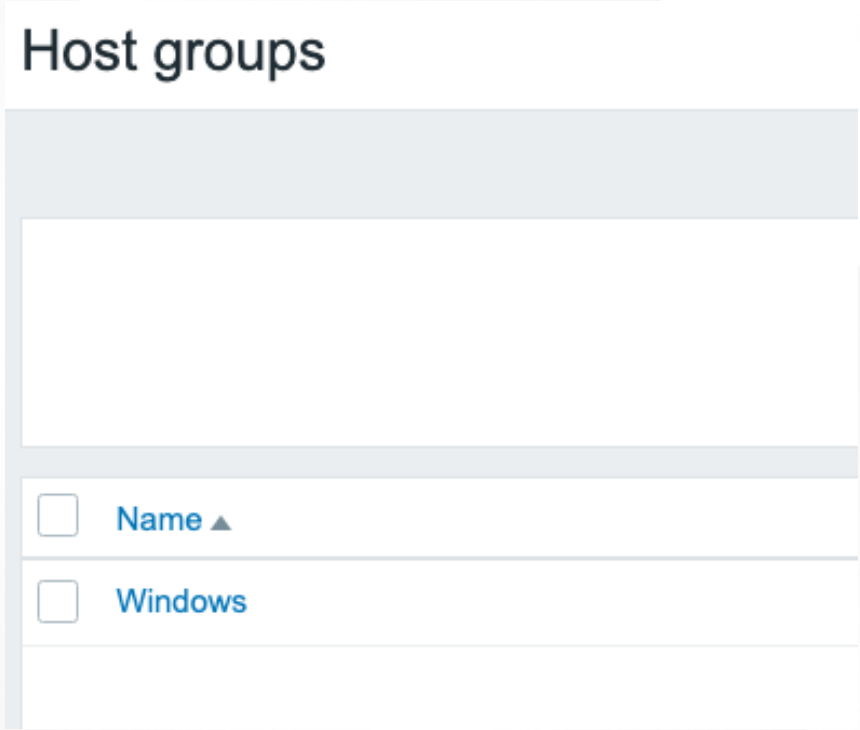
Considerations - naming

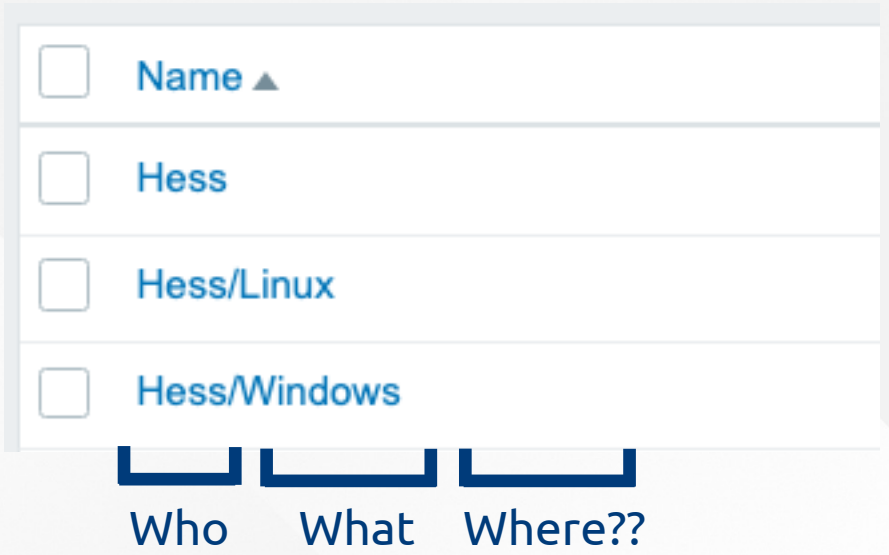
- Naming! Of course. Names should be unique in Zabbix



Considerations Host groups

- Used for logical grouping and permissions



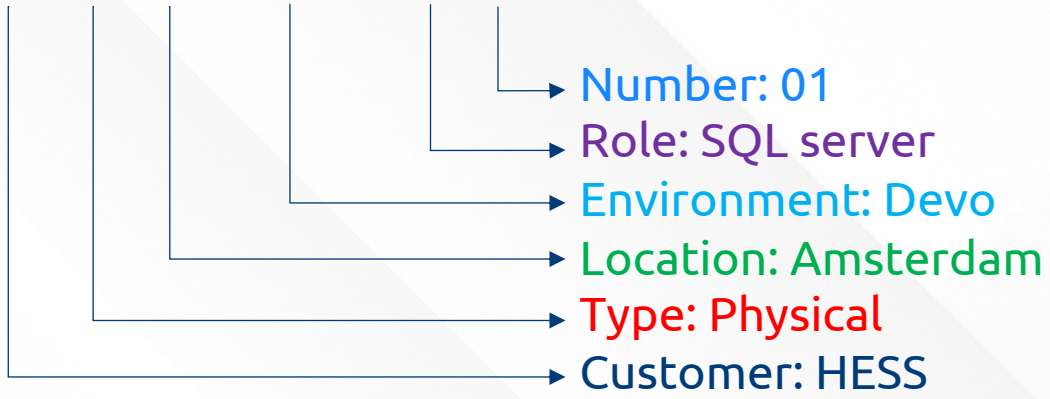


Considerations – naming - hosts

- Host names, conventions etc

<4 digit customername>-<type><3letter location code>-<env><role><2 digit incrementing number>

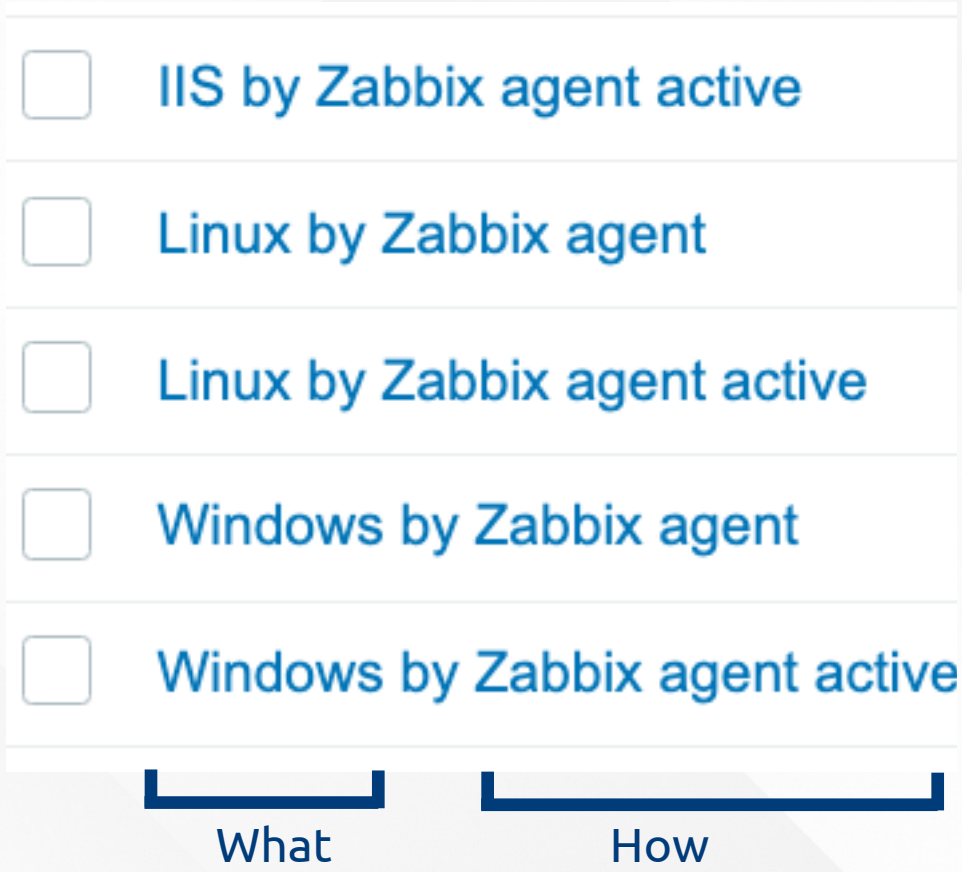
HESS-PAMS-DEVO-SQL01



Type:	Location:	Environment:	Role:
*Physical	*AMS	*Development	*SQL
*Virtual	*MID	*Test	*DHCP
*Service	*LON	*Acceptance	*WEB
*Website	*WIL	*Production	*LINUX
* ….	* ….	*Education	*LAMP
			* ….

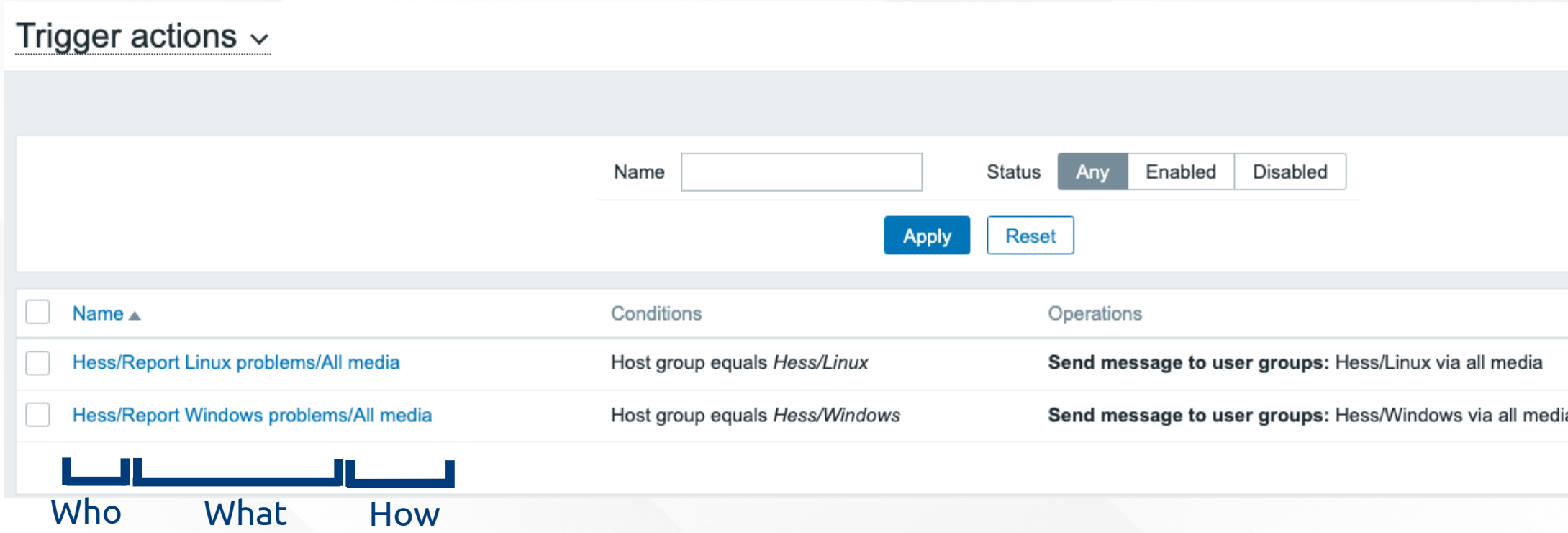
Considerations – naming - templates

- Templates, naming conventions



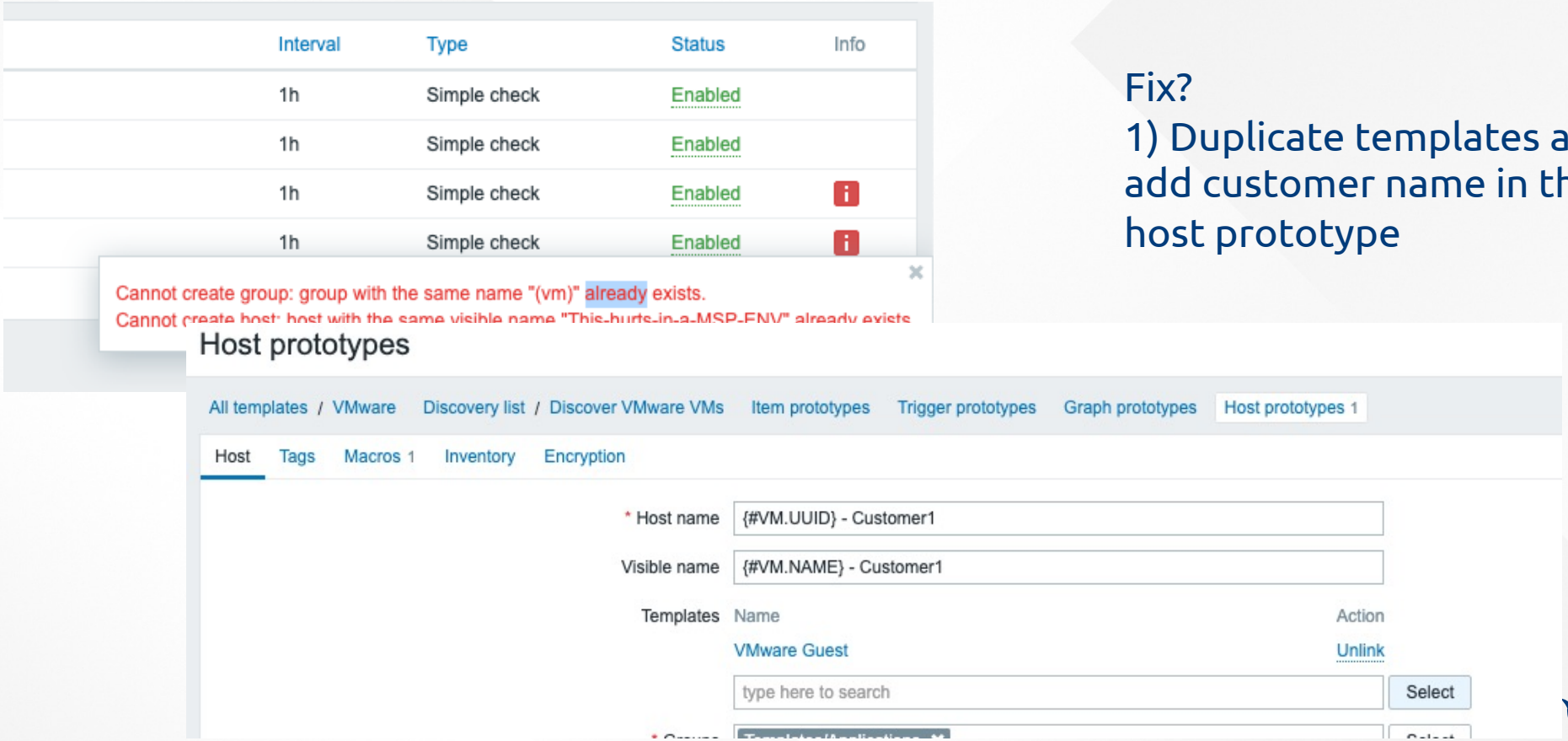
Considerations – naming - actions

- Actions? Of course!



Considerations – naming – Vmware monitoring

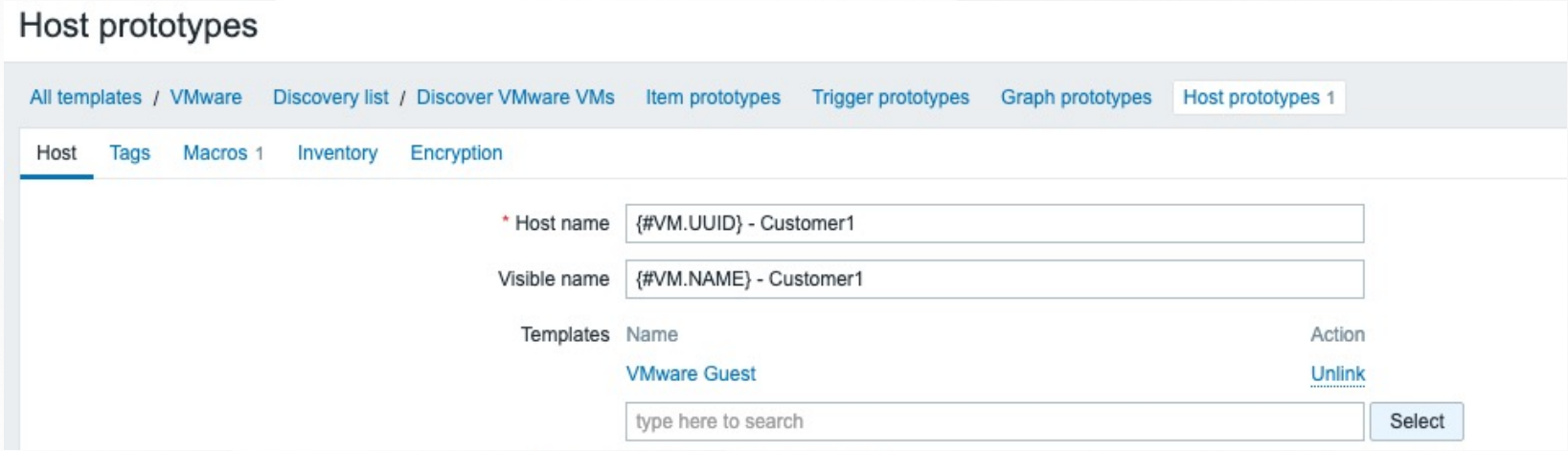
- Special love for VMWare host prototypes



Fix?
1) Duplicate templates and add customer name in the host prototype

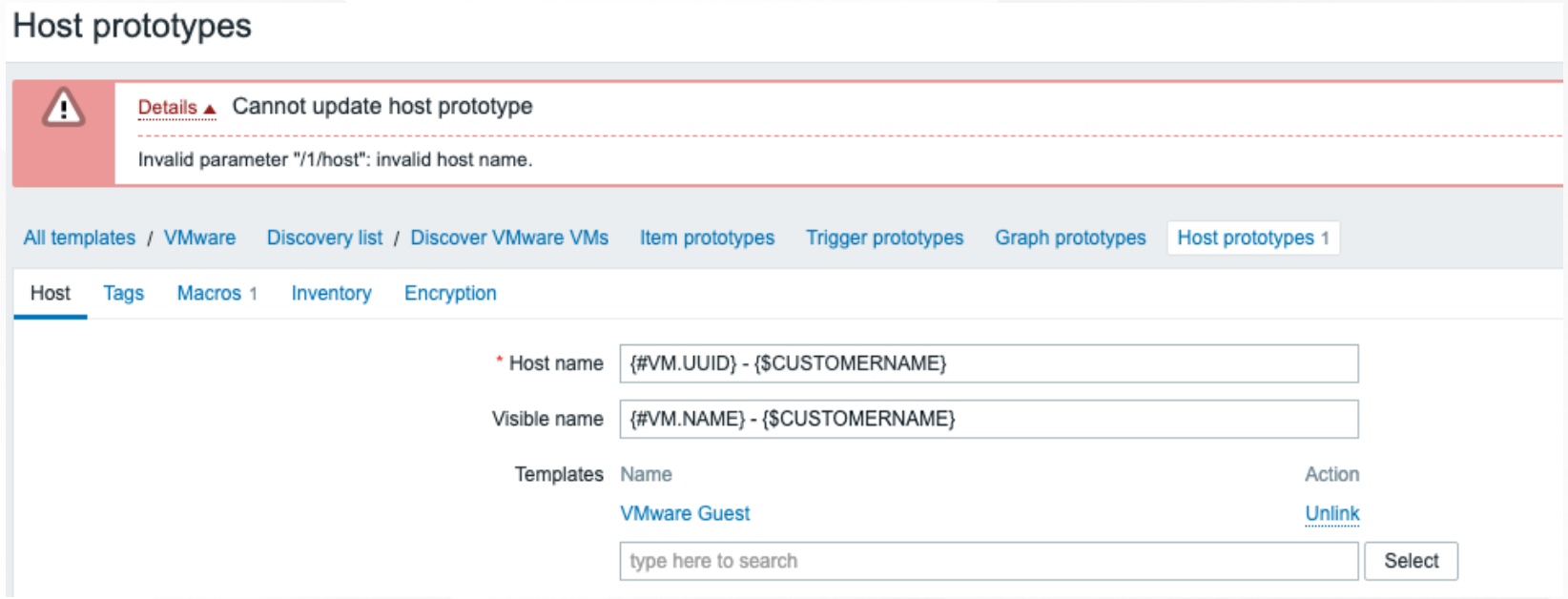
Considerations – naming – Vmware monitoring

- Fix 1:
  - Duplicate templates and add customer name in the host prototype



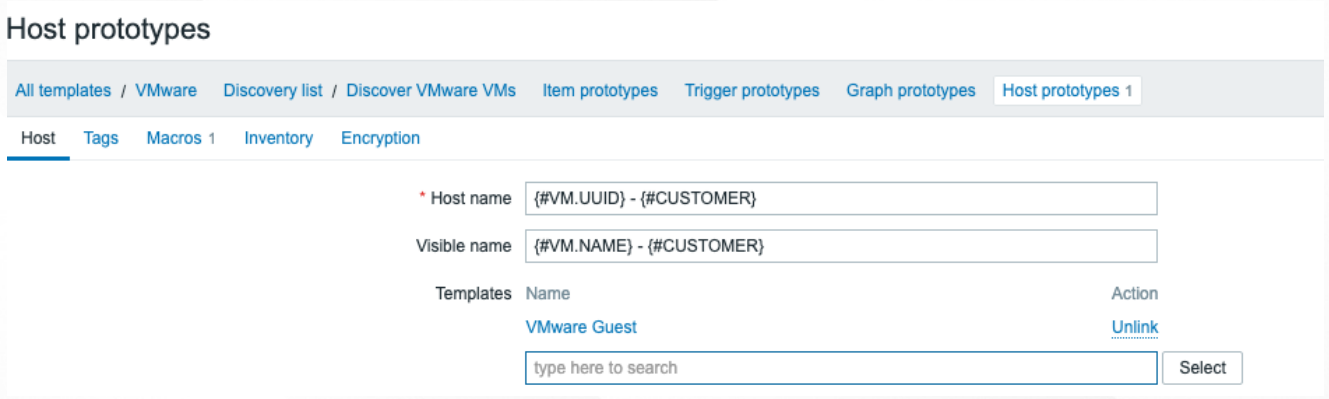
Considerations – naming – Vmware monitoring

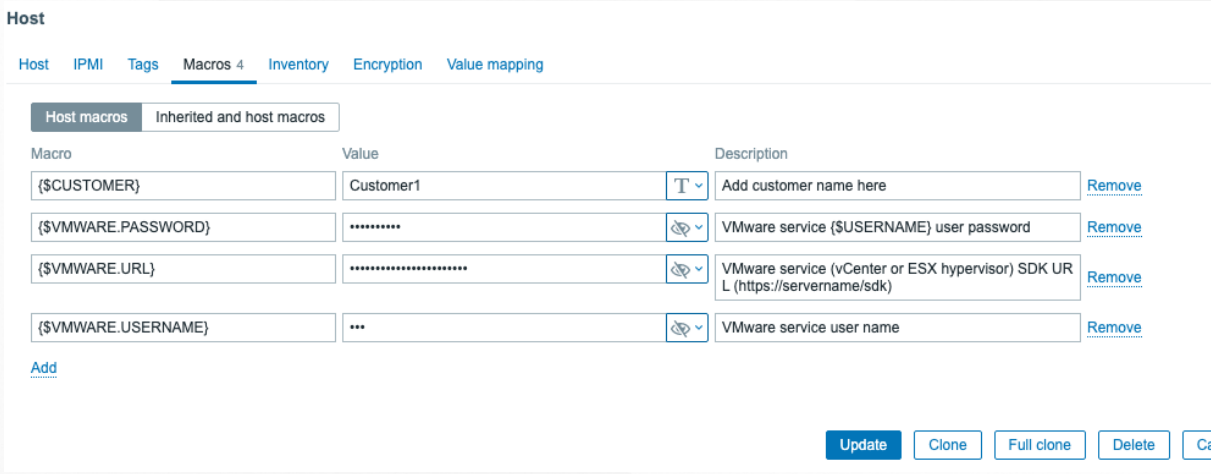
- Fix 2:
  - Just add an usermacro in the name - that way it should become dynamic! Nope….



Considerations – naming – Vmware monitoring

- Fix 2:
  - Just add an usermacro in the name - that way it should become dynamic! But “hide” it in a LLD macro 🤓

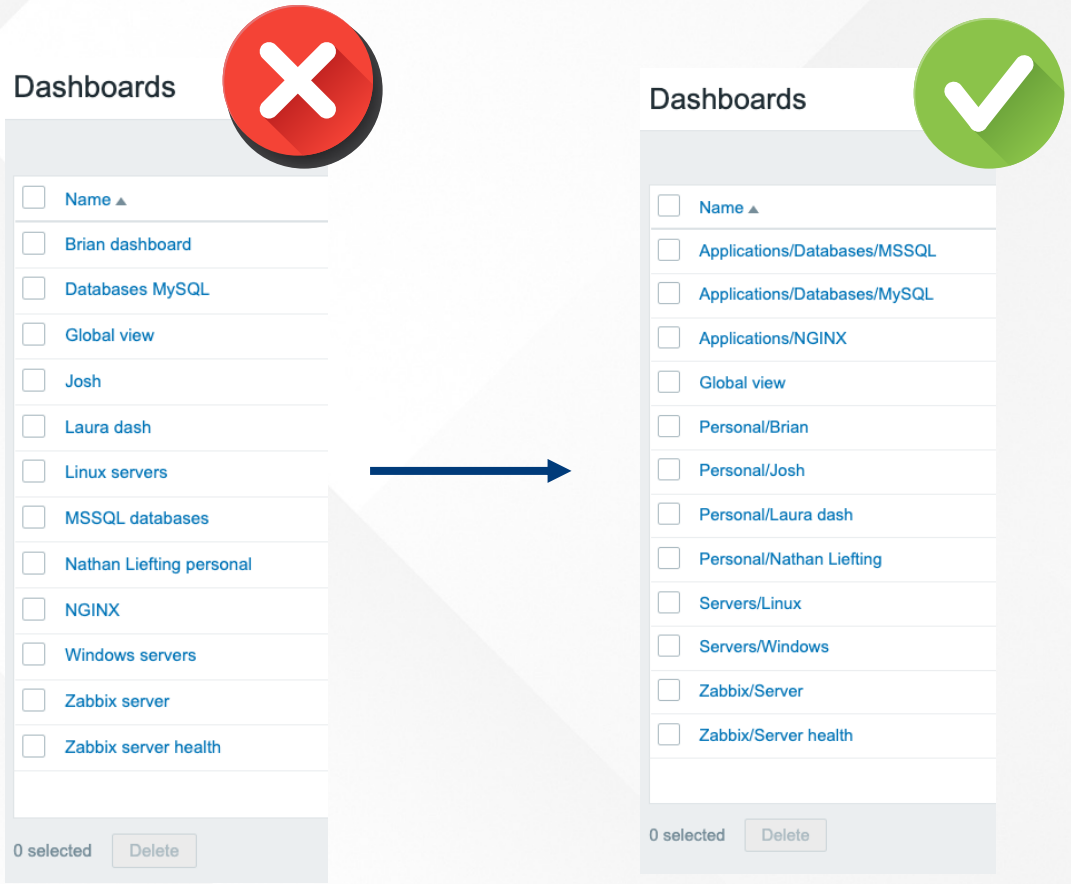




Template available: https://github.com/OpensourceICTSolutions/custom-vmware-template

Considerations – naming - dashboards?

- How to work with hundreds of dashboards



Permissions

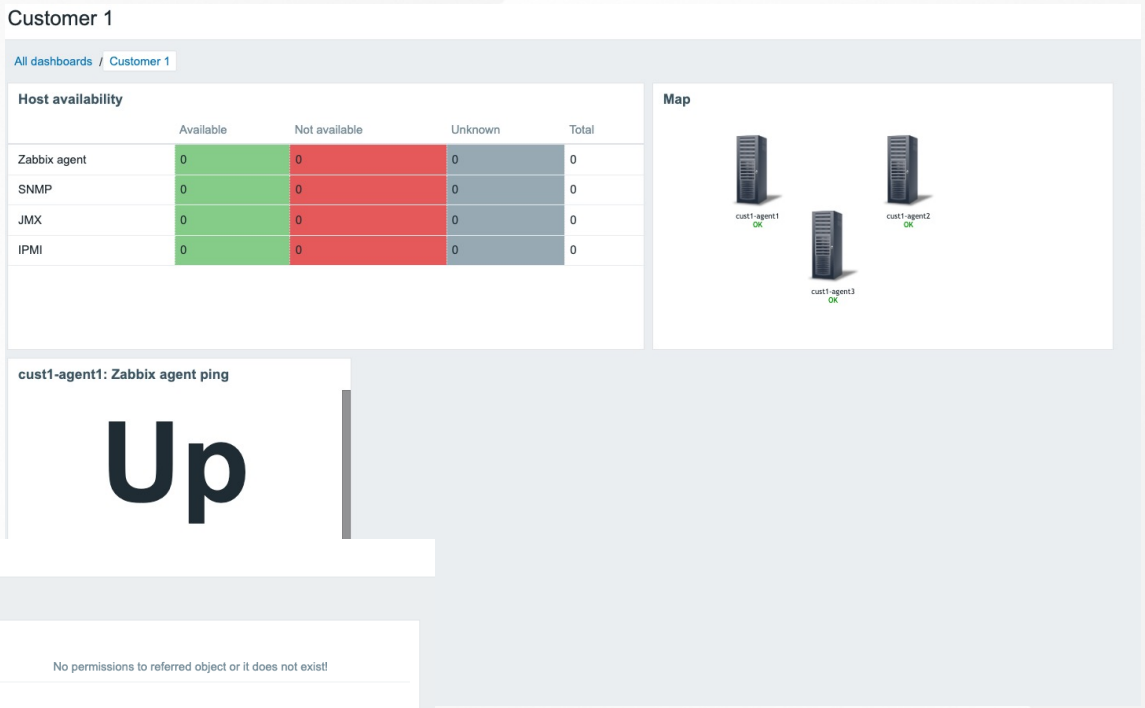
- Ahhh. The. Most. Important. Ever.

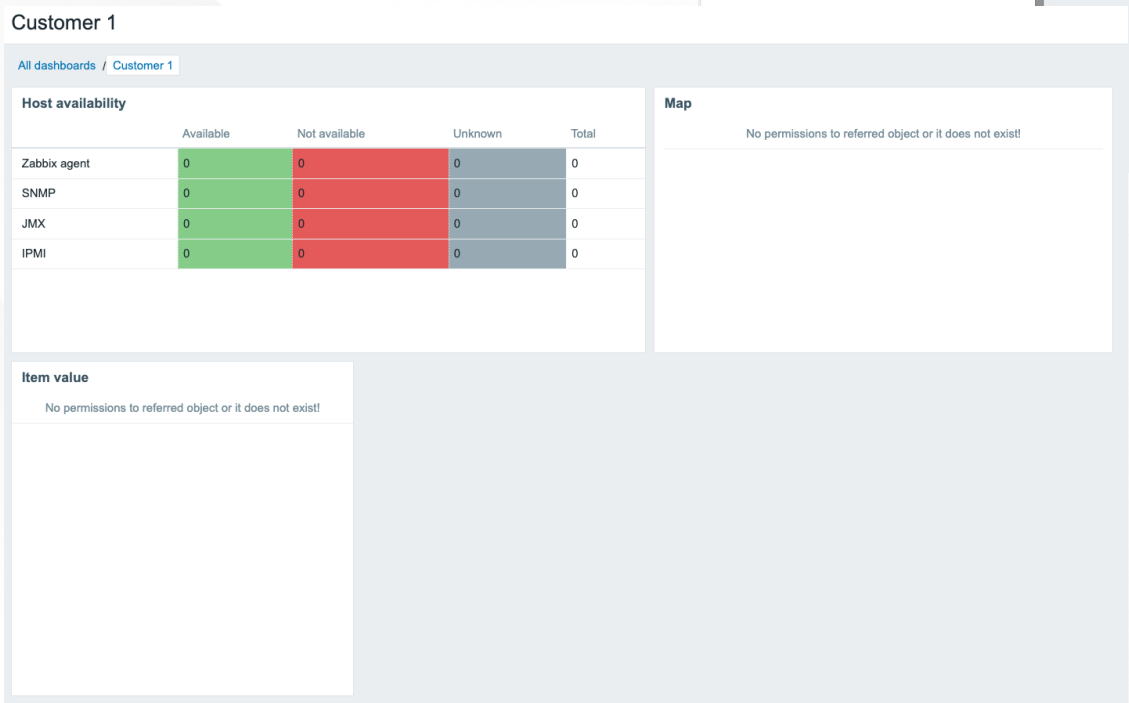
Permissions – Admin/SuperAdmin rights

- SuperAdmin == Root
- Admin follows permissions(read/read-write) set per usergroup
- User = Readonly permissions as set per usergroup

Permissions - dashboards

- Who can see what?
- Permissions are fully respected





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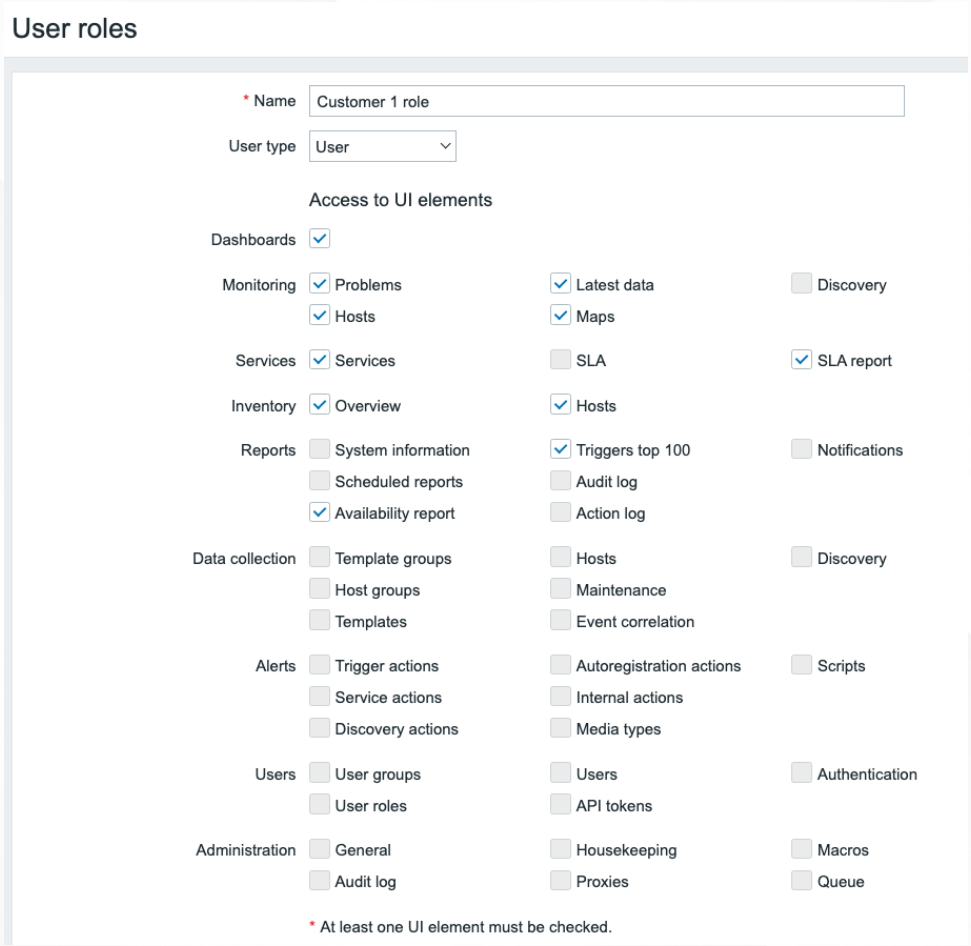
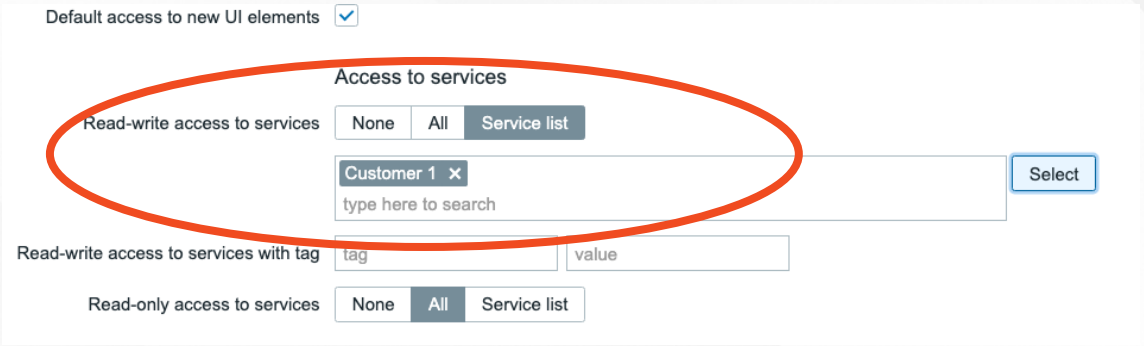
Permissions – custom roles

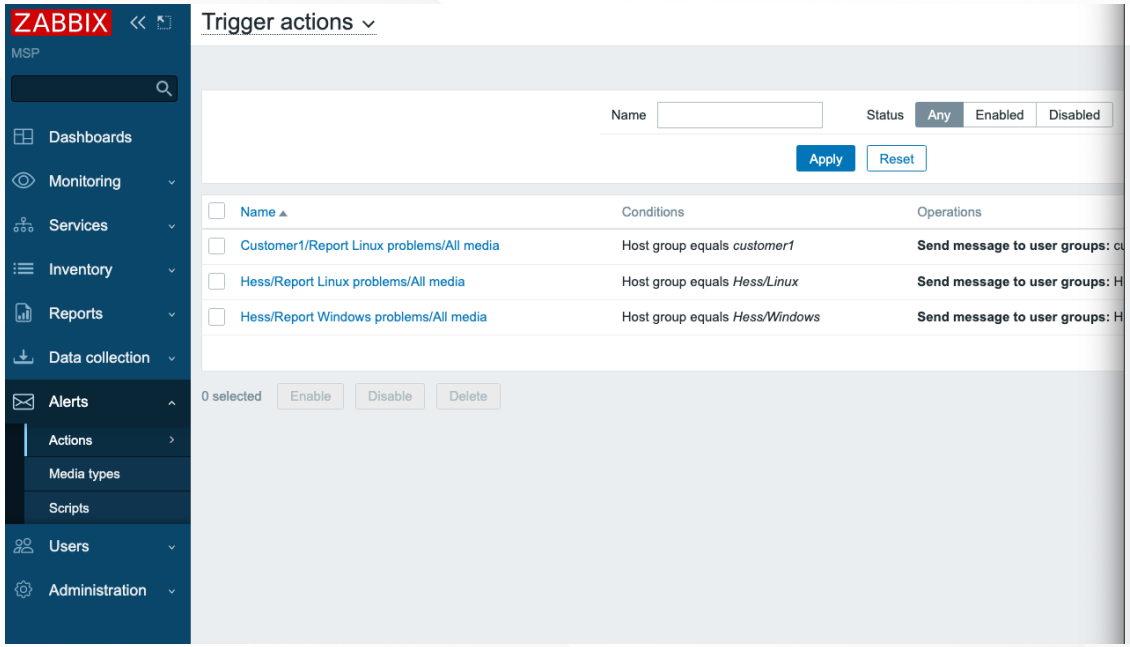




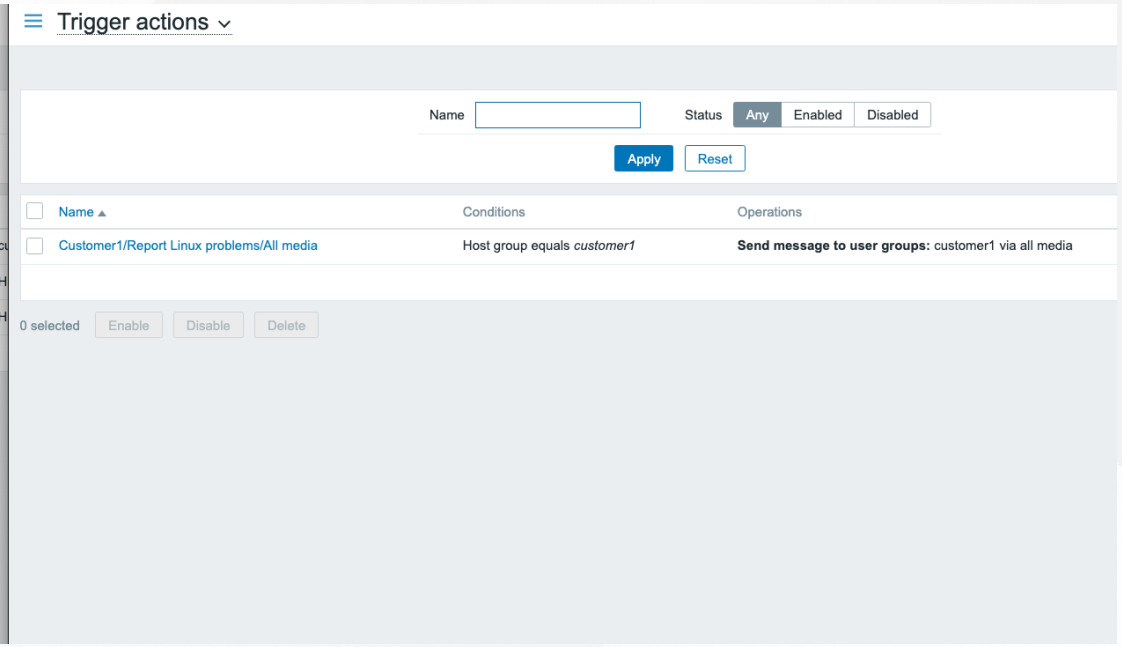
Permissions - actions

- And actions? How about those?

Super Admin

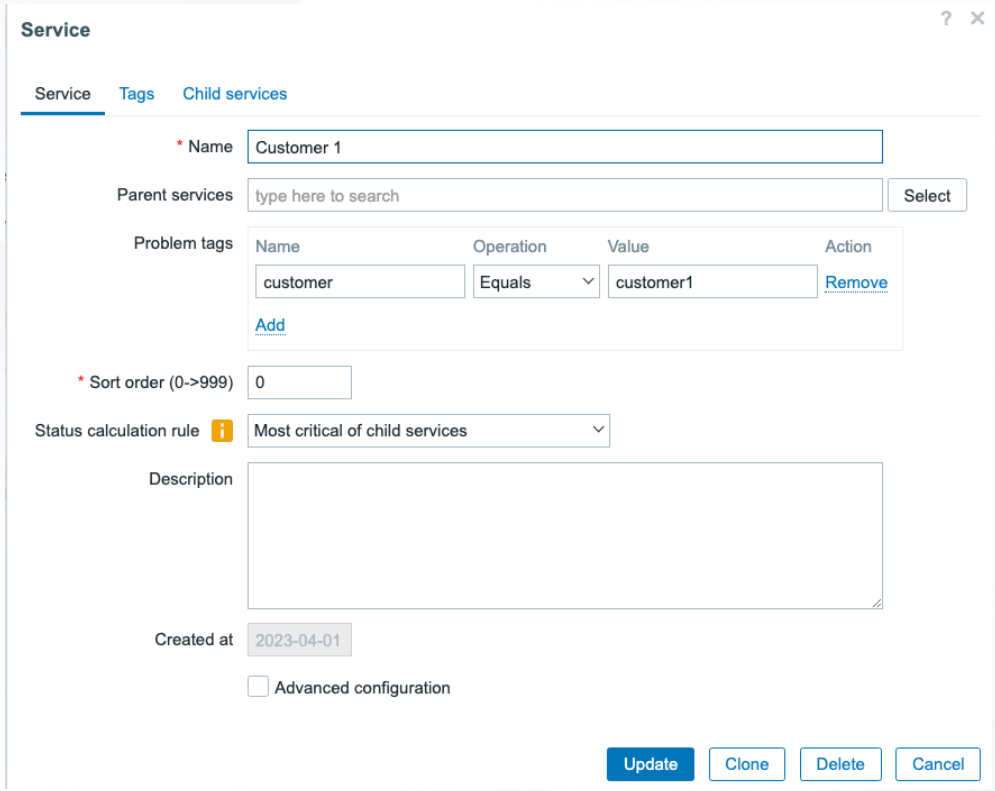


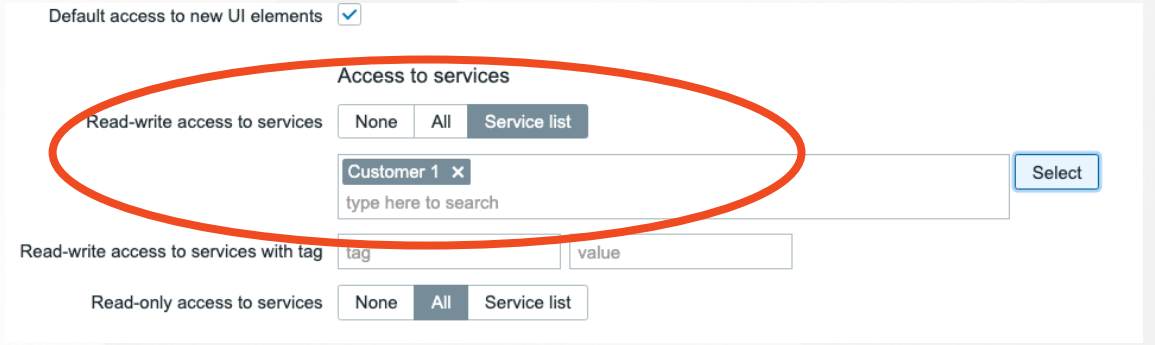
Customer 1
(Admin, RW on customer1 hostgroup)



Permissions – Services

- KPI. How is it implemented?

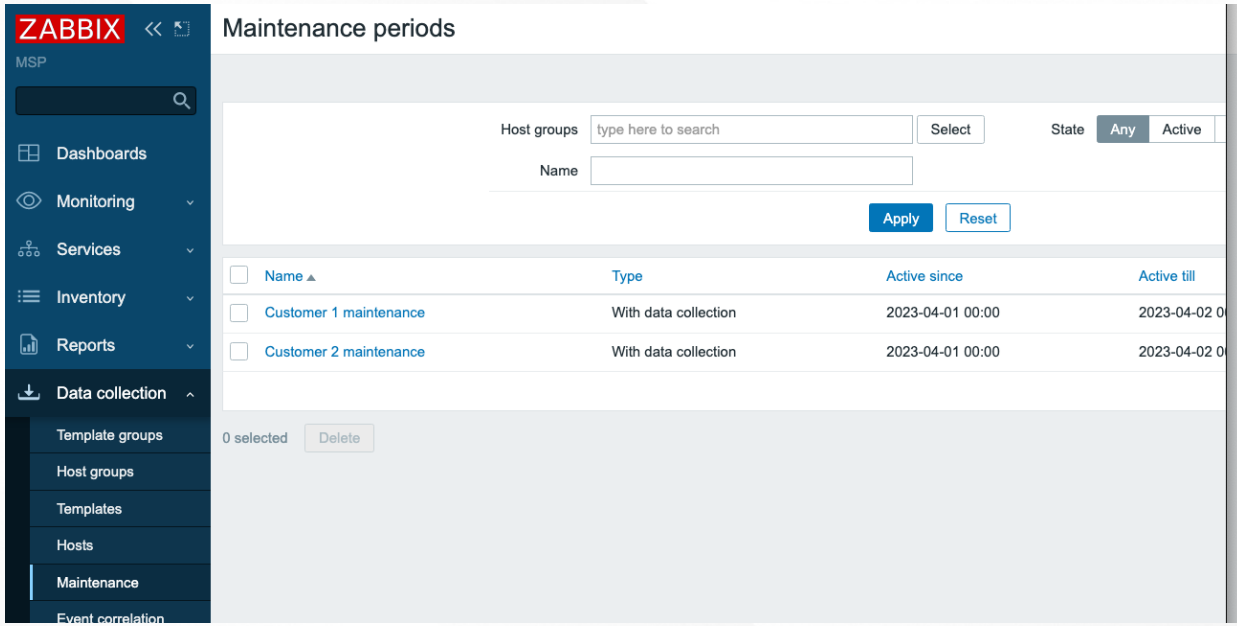




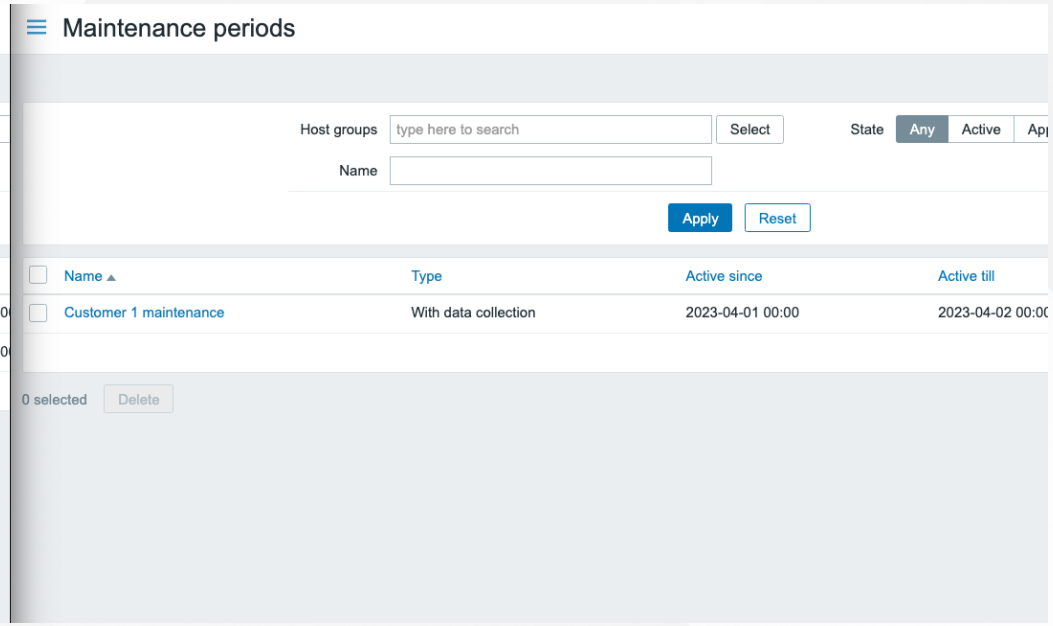
Permissions - Maintenance

- Equally important.

Super Admin



Customer 1
(Admin, RW on customer1 hostgroup)



Permissions – conclusion

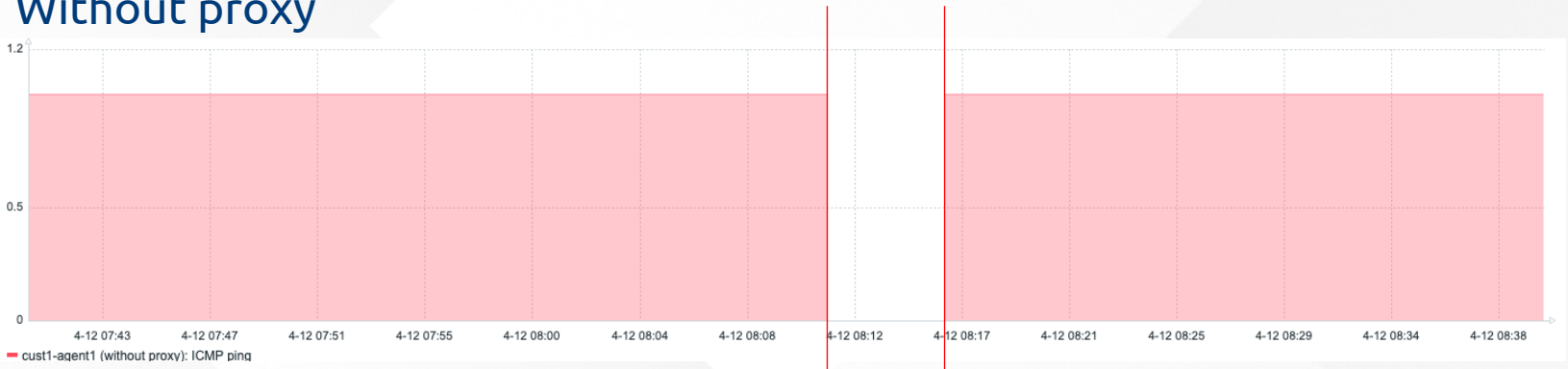
- Yes, it is possible to use Zabbix in a MSP environment, permission wise

- NO do not make your customers SuperAdmin, ever.
- Provision them as ‘User’ and only upon request as ‘Admin’ to their own groups.

Downtime

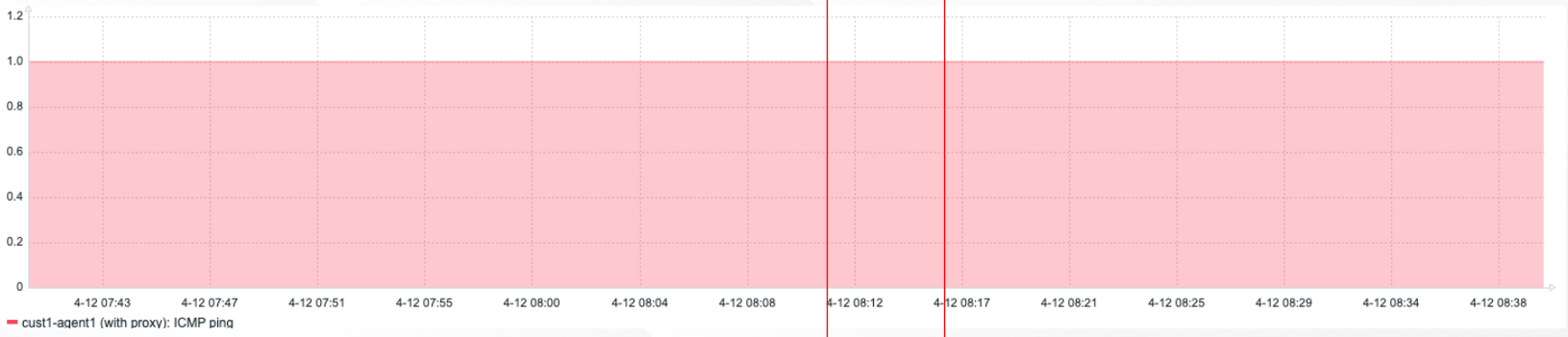
- What happens when the Zabbix server is unavailable?

Without proxy

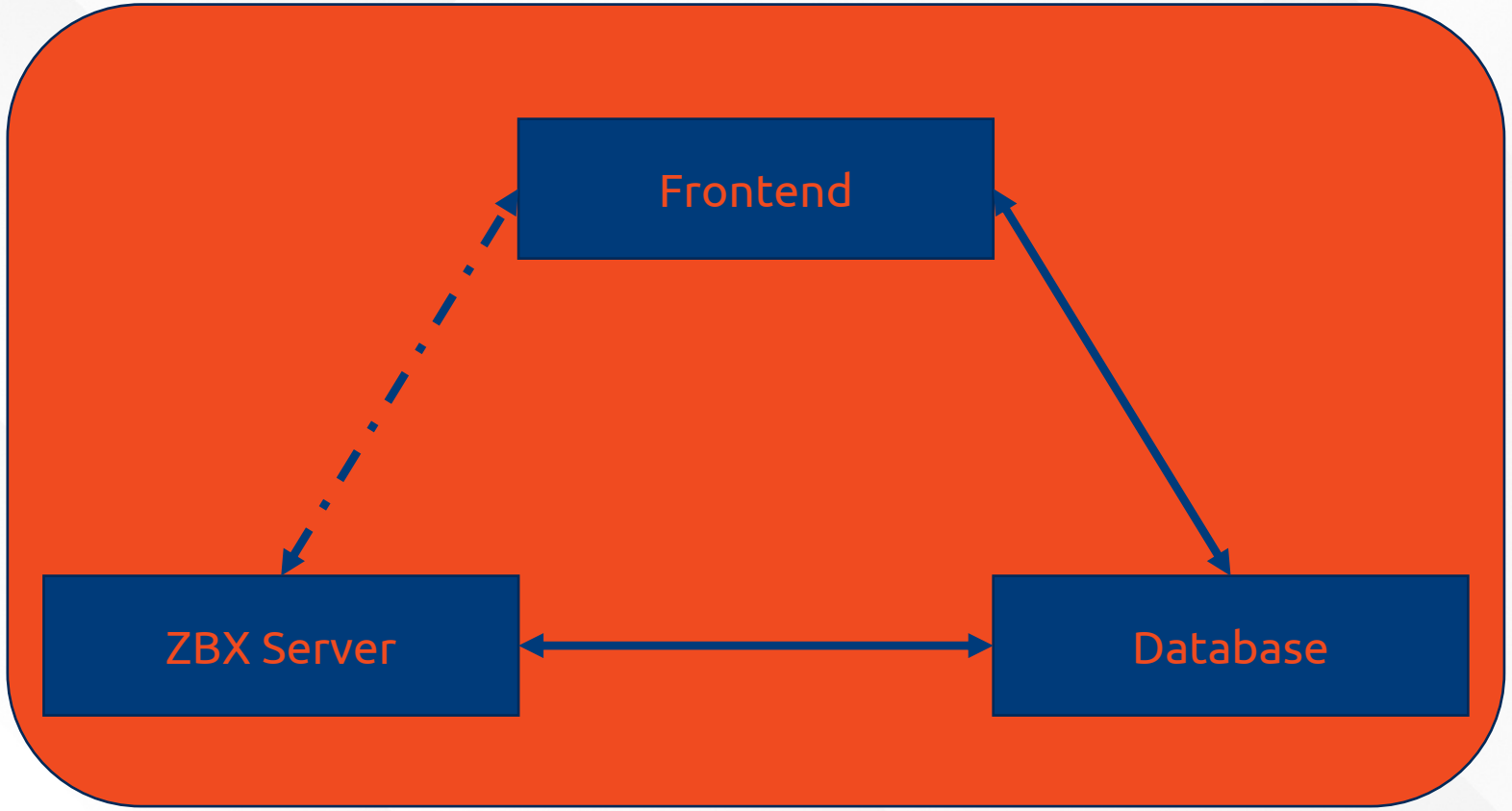


Zabbix server down

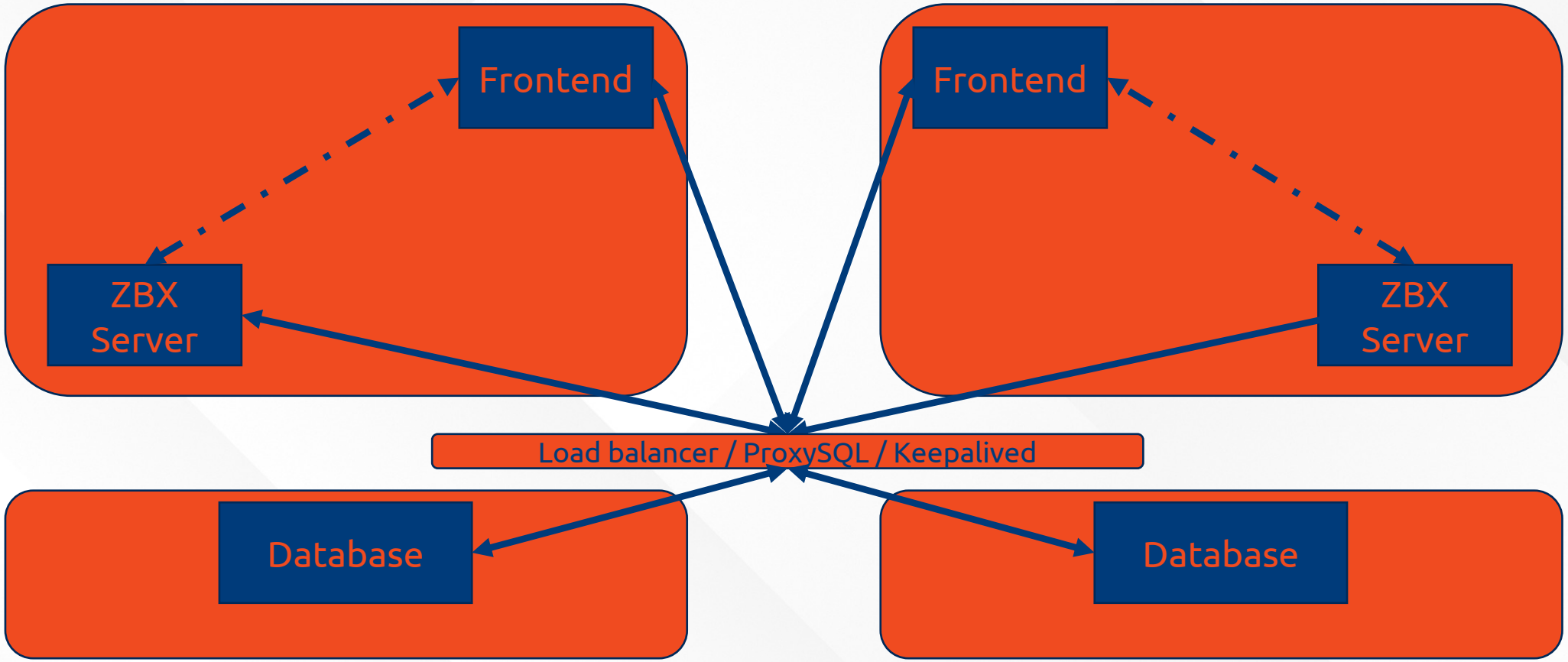
With proxy



HA setups



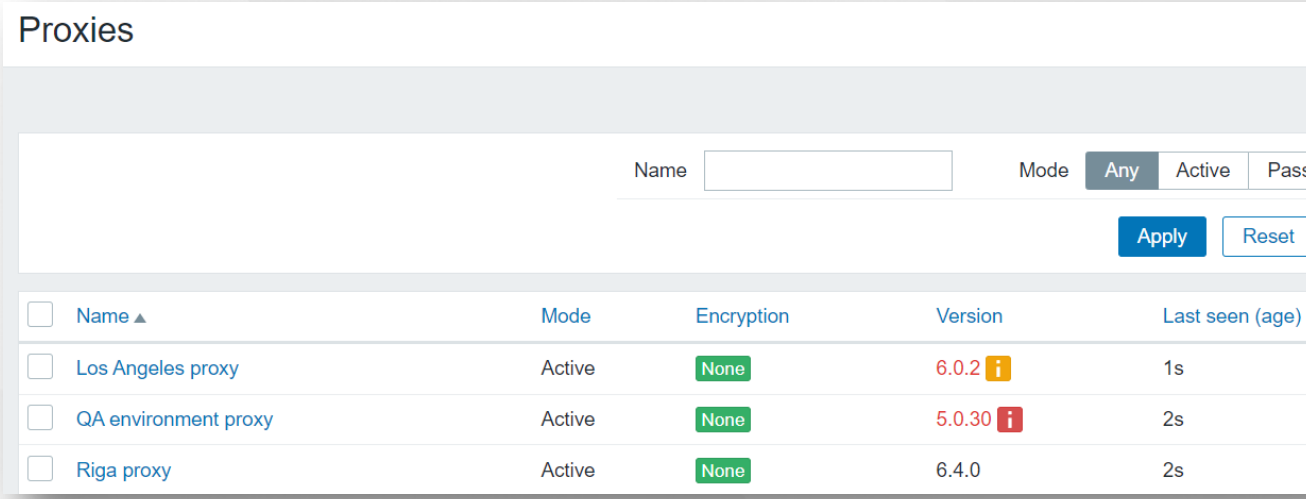
HA setups


Frontend
Frontend
ZBX
Server
ZBX
Server
Load balancer / ProxySQL / Keepalived
Database
Database

Upgrades

- Zabbix <6.4:
  - Upgrade Server + Proxies at “the same time” due to incompatibility
  - Agents can be done later

- Zabbix >6.4:
  - Upgrade Server
  - Upgrade Proxy
    (can be done at convenient moment)
  - Upgrade agent



Wrapping up

- Zabbix in a MSP environment? Yes!
- But a few considerations must be taken in account before building the environment

Contact

Opensource ICT Solutions B.V.
Agriport 38D
1775TB Middenmeer
The Netherlands
T. +31 (0) 72 743 65 83
E. info@oicts.nl
W. https://oicts.nl

Opensource ICT Solutions LTD
5-7 Cranwood Street
London EC1V 9EE
United Kingdom
T. +44 (0) 20 4551 1827
E. info@oicts.co.uk
W. https://oicts.co.uk

Opensource ICT Solutions LLC
251 Little Falls Drive
Wilmington, DE 19808
United States
T. +1 (929) 377 1253
E. info@oicts.com
W. https://oicts.com

Lets see if there are any questions!