Case study: Performance improvements with the new SNMP bulk monitoring

ZABBIX '23 CONFERENCE GERMANY

Edgars Melveris

Technical support engineer

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Deployment

Turn-key project by Zabbix:

- Planned load ~10k NVPS
- SNMP checks almost exclusively.
- Zabbix version 5.0
- ~10 proxies (HA)

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Instance overview

System information

Parameter	Value	Details
Zabbix server is running	Yes	zabbix.example.com:10051
Number of hosts (enabled/disabled)	14306	13867 / 439
Number of templates	342	
Number of items (enabled/disabled/not supported)	10779688	9953290 / 251426 / 574972
Number of triggers (enabled/disabled [problem/ok])	980662	639466/ 341196 [5914 / 633552]
Number of users (online)	322	30
Required server performance, new values per second	12548	

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Deployment

Some hosts deployed:

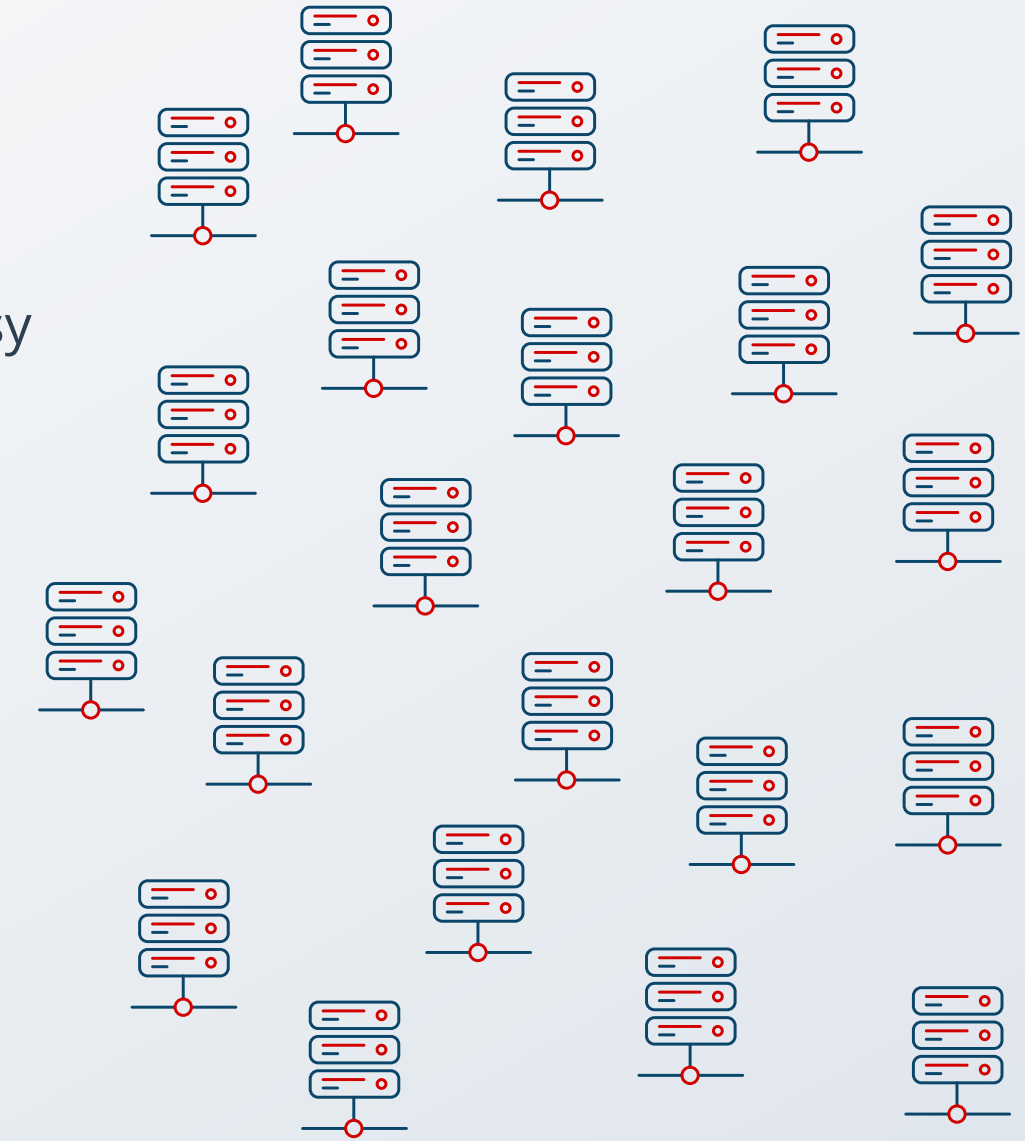
- Pollers quickly hit 100% busy
- StartPollers=100 -> 200

More hosts added:

- StartPollers=200 -> 500

Even more hosts added:

- Pollers 100% busy again
- StartPollers=500->1000



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Deployment

Hoping for ZBXNEXT-6872

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Deployment

But what is the problem?

Many hosts timed-out, so timeout was increased

```
### Option: Timeout
#       Specifies how long we wait for agent, SNMP device or external check
# Range: 1-30
# Default: 4
Timeout=20
```

1 Poller collects less than 1 value per second

```
zabbix_server: poller #1 [got 5 values in 20.00465 sec, getting values]
zabbix_server: poller #2 [got 16 values in 20.00328 sec, getting values]
```

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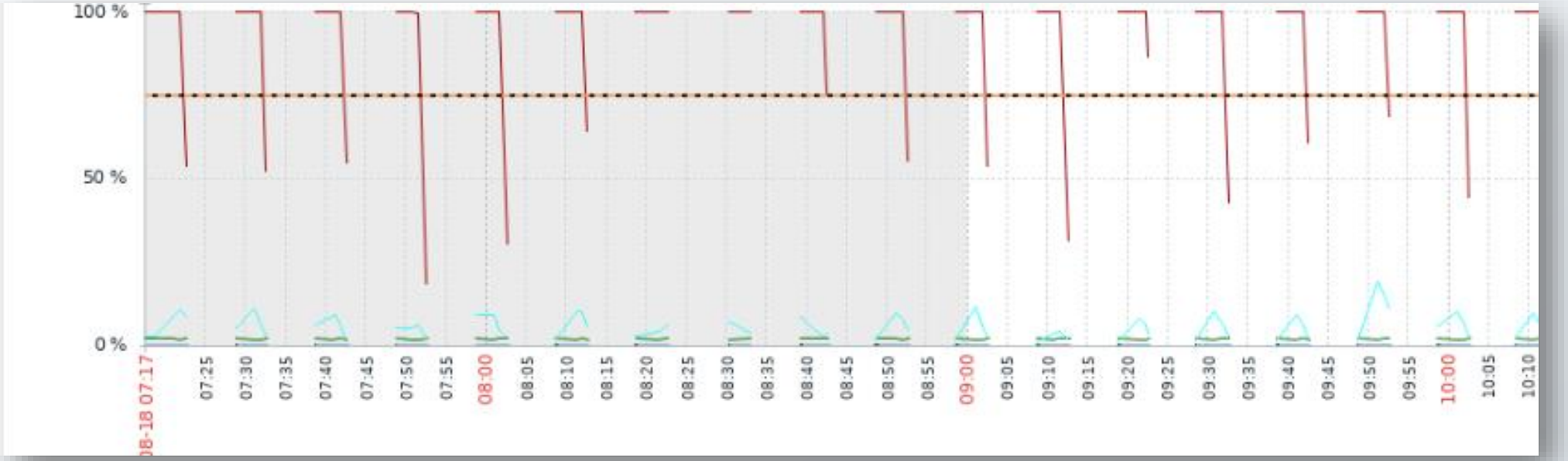
Deployment

Pollers are still a too busy (the red line ———)



Solution? Add more proxies!

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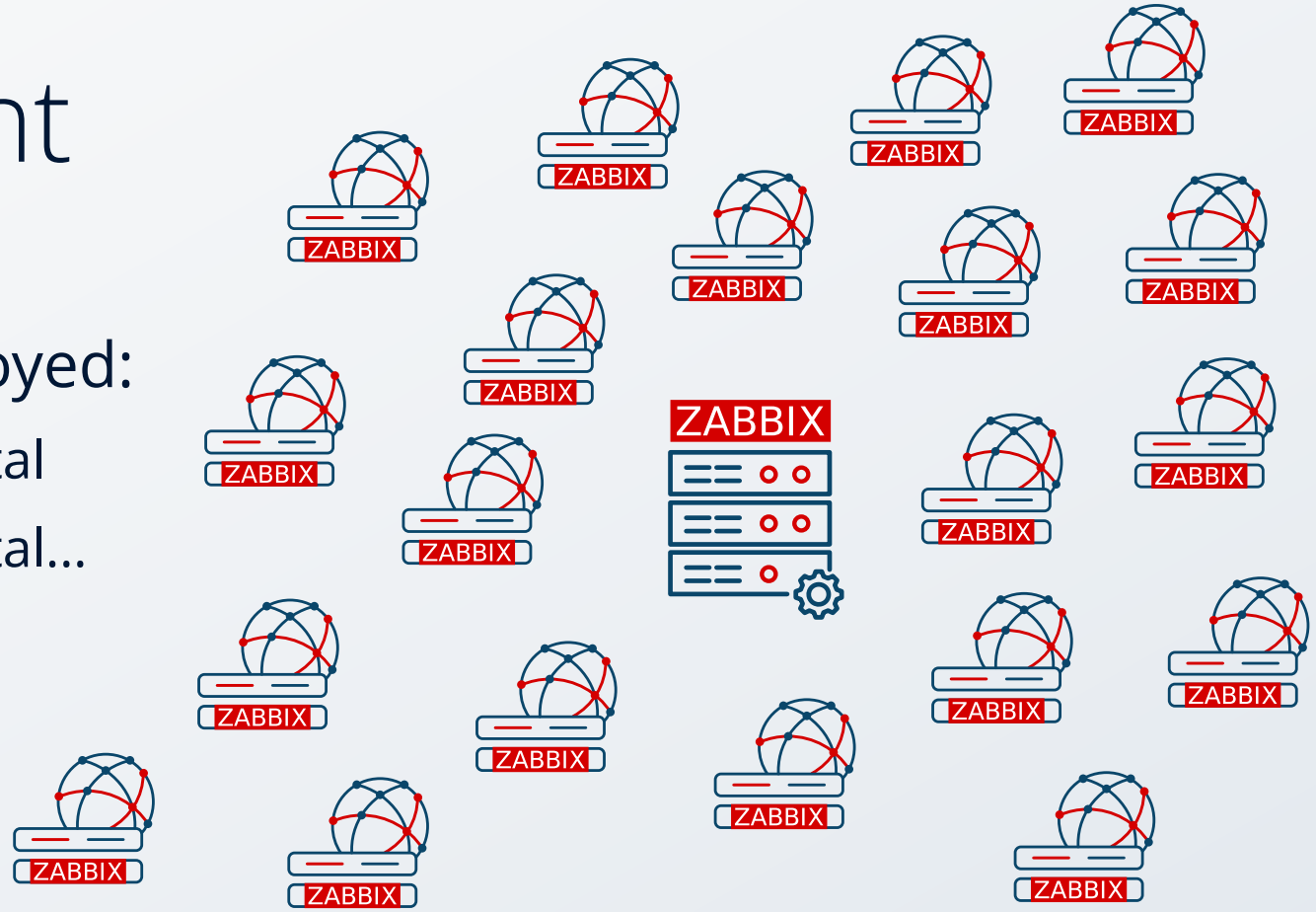
Deployment

More proxies deployed:

- 10 proxies in total
- 20 proxies in total...
- Still not enough



Customer doesn't want to devote more hardware resources ☹

Containers? Run multiple binaries with custom conf files?

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Deployment

Break up the HA on proxies!

- 40 proxies now
- Situation somewhat stable
- 12k NVPS

Some devices are slower than others

Constant need to balance them equally between proxies

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Migration

Zabbix 6.4 was released - ZBXNEXT-4428

ZABBIX FEATURE REQUESTS / ZBXNEXT-4428

internal logic of SNMP bulk processing

Closed

Details

Type:	Change Request	Resolution:	Fixed
Priority:	Major	Fix Version/s:	6.4.0beta5, ... (1)
Affects Version/s:	3.4.7		
Component/s:	Proxy (P), ... (1)		

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Big hopes

Upgrade Zabbix:

- Upgrade backend DB (internal requirement)
- Upgrade Zabbix server to 6.4

Nothing changed ☹

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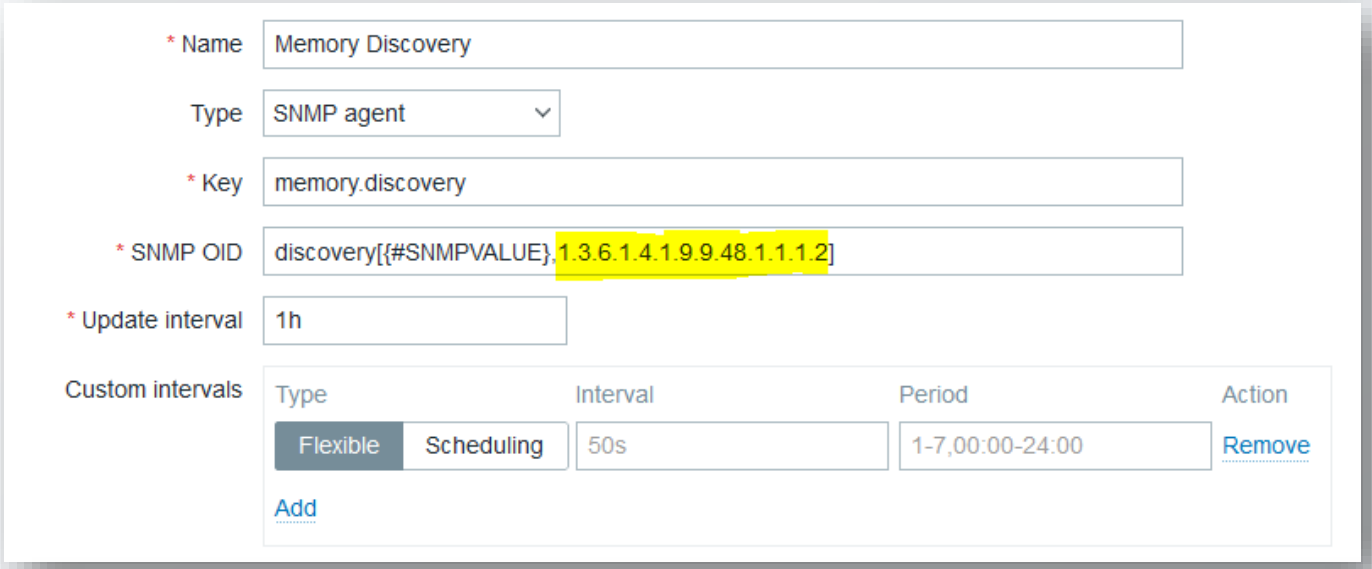
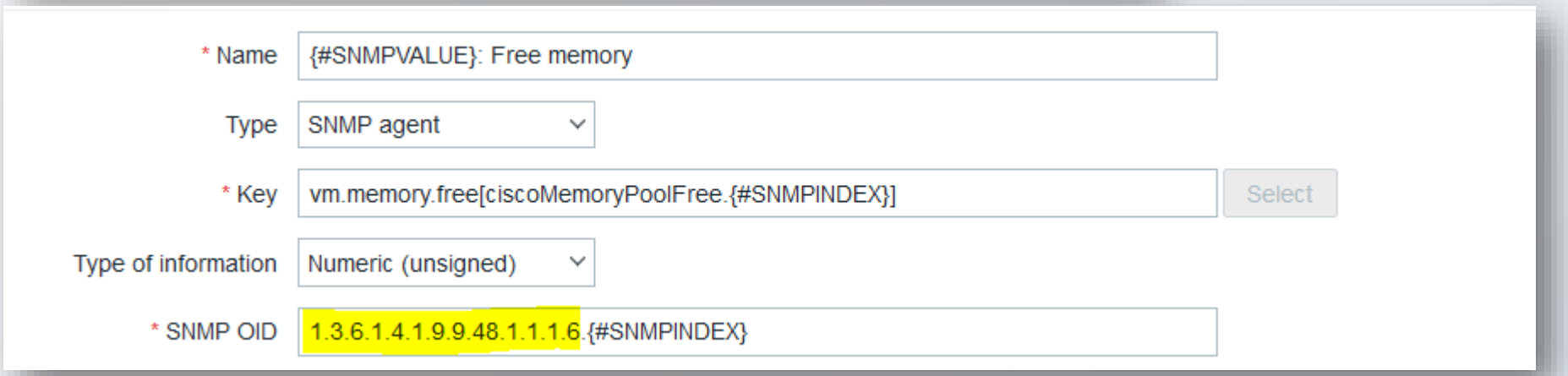
Migration





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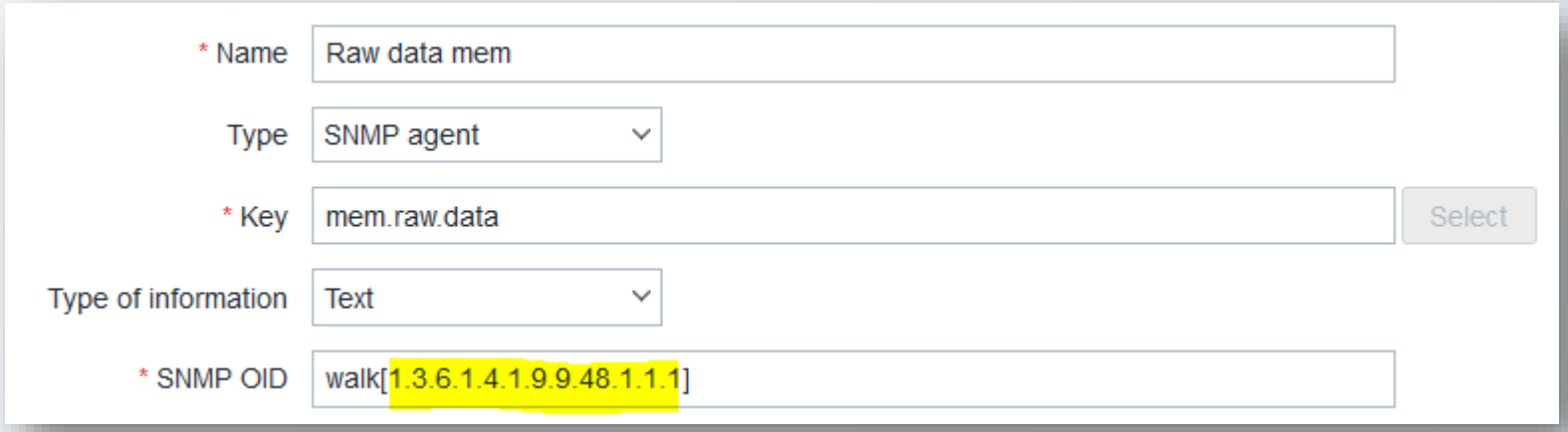
Migration – Master item

```
1.3.6.1.4.1.9.9.48.1.1.1.2
1.3.6.1.4.1.9.9.48.1.1.1.6
1.3.6.1.4.1.9.9.48.1.1.1.5

1.3.6.1.4.1.9.9.48.1.1.1
```

Full clone template – «My Template name – WALK»



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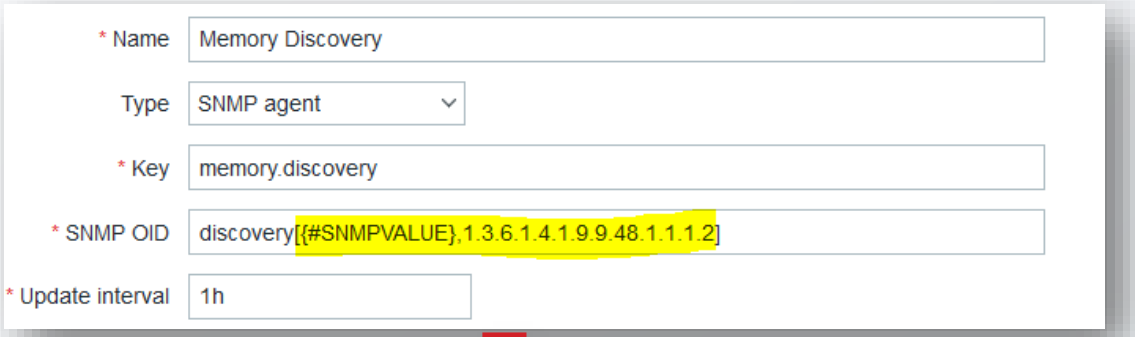
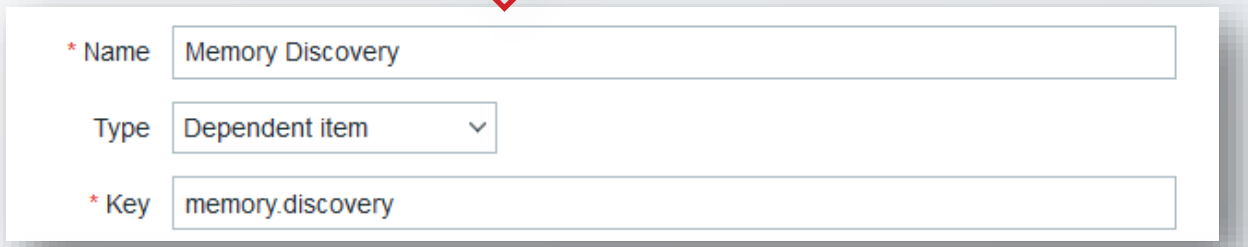
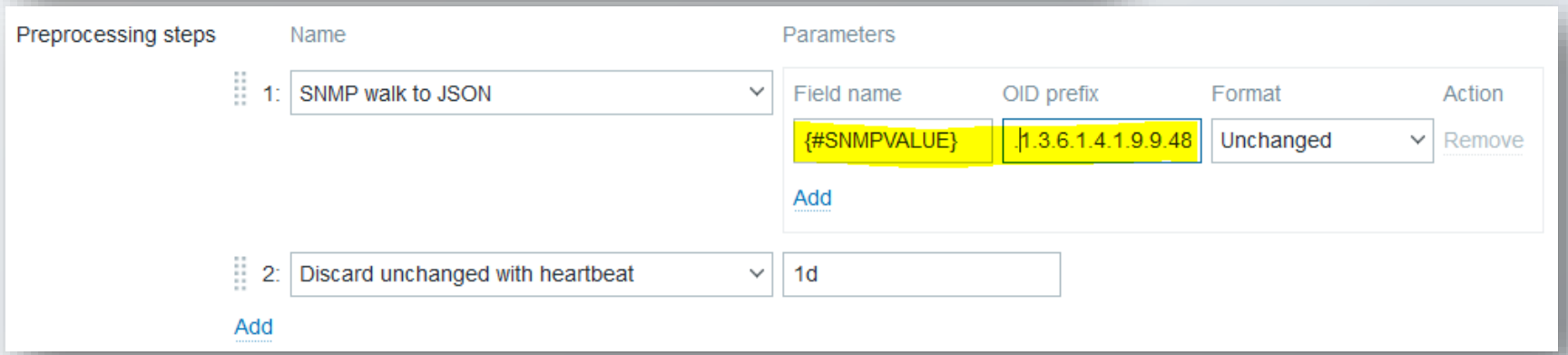
Migration – LLD rule







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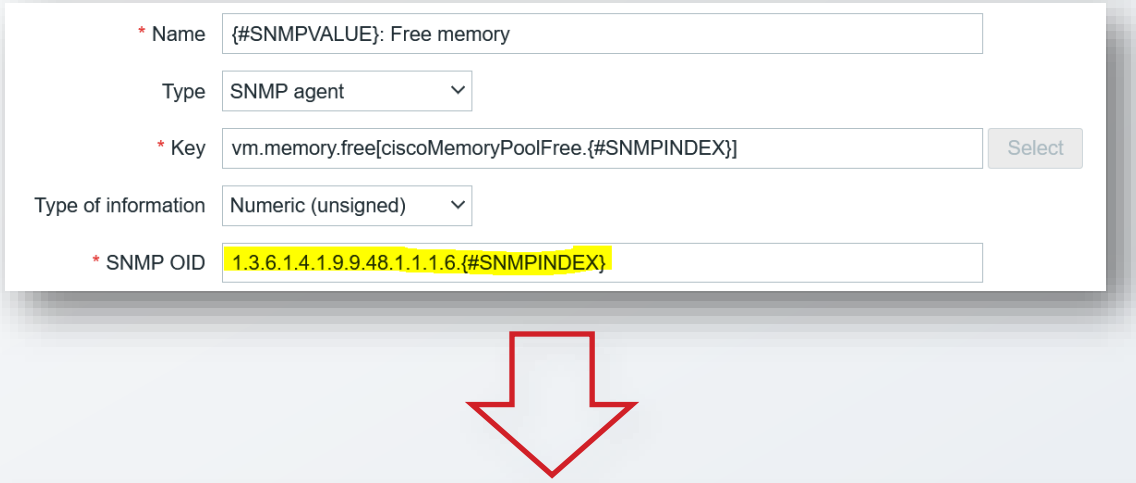
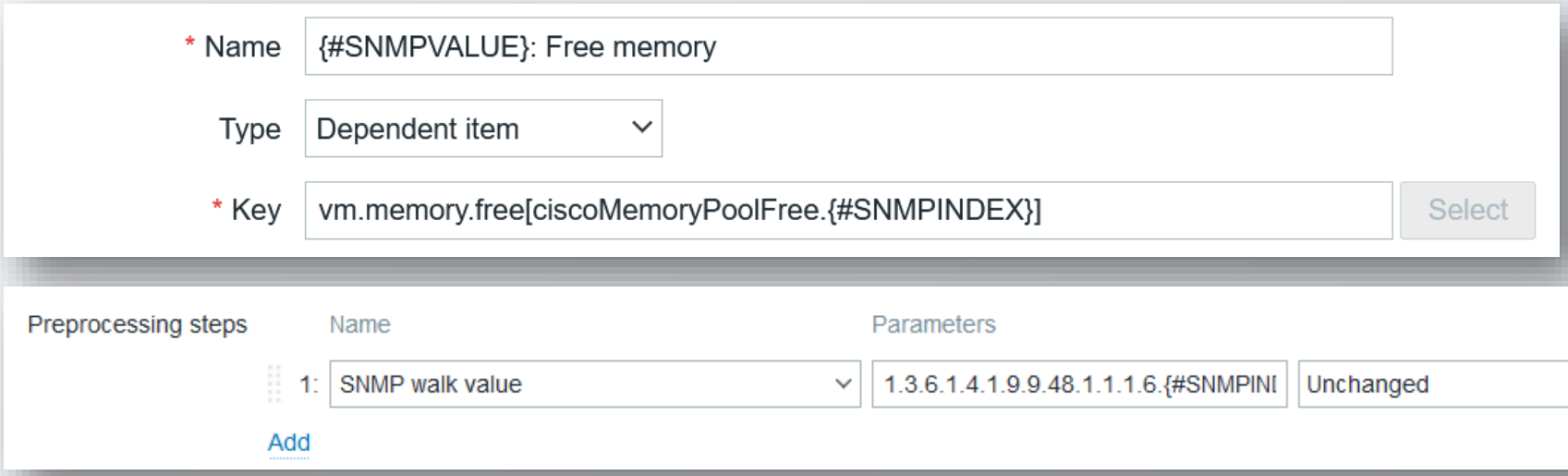
Migration – Items



Master item
SNMP data collector



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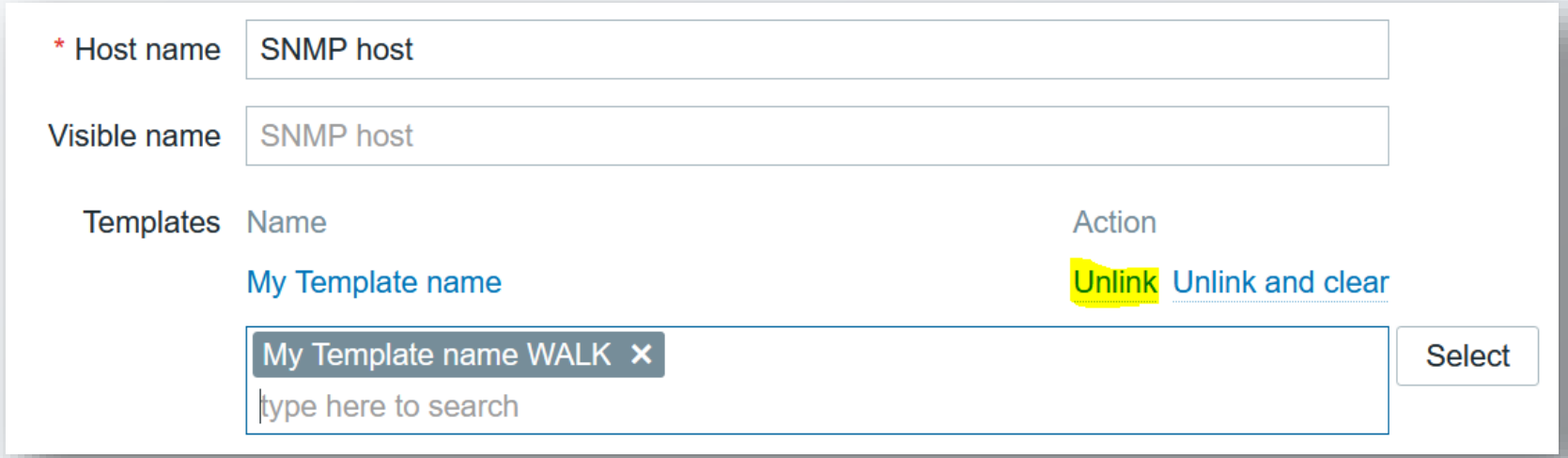
Migration

Apply to hosts



And hope for the best

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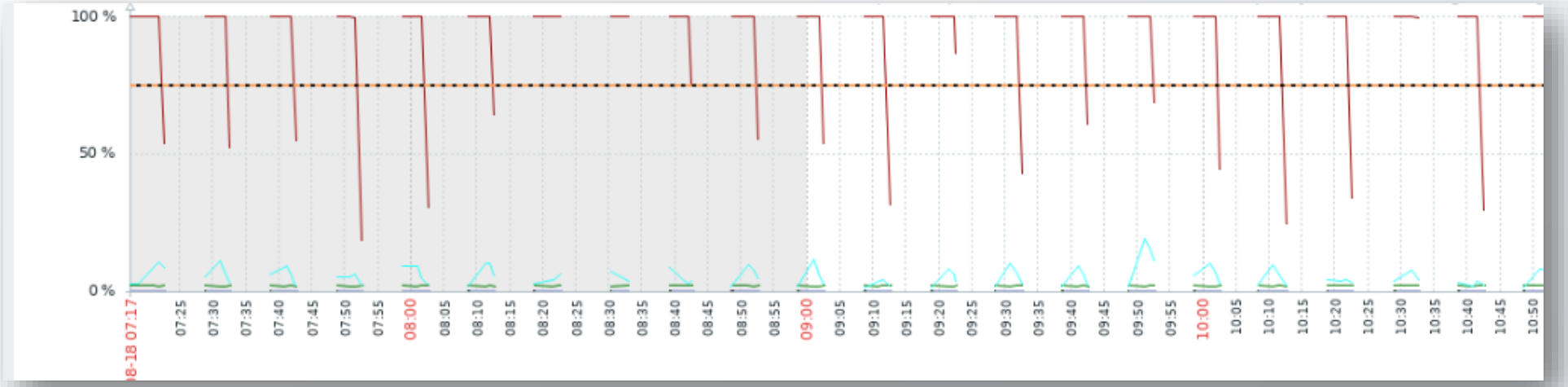

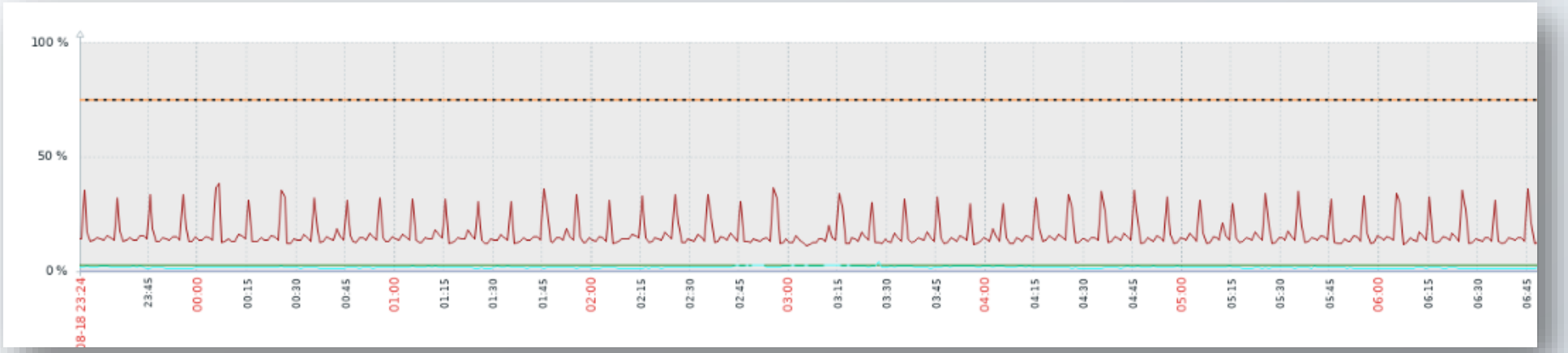

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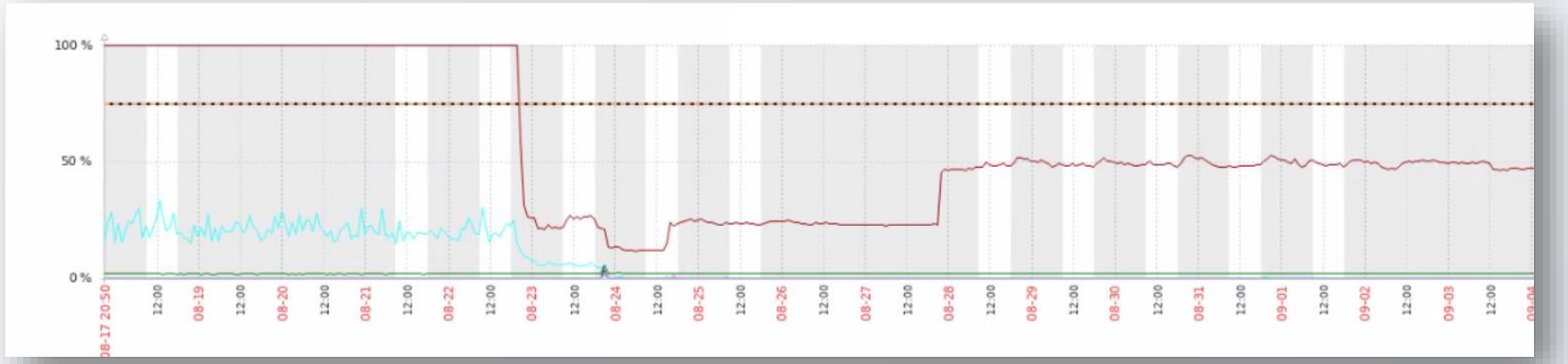
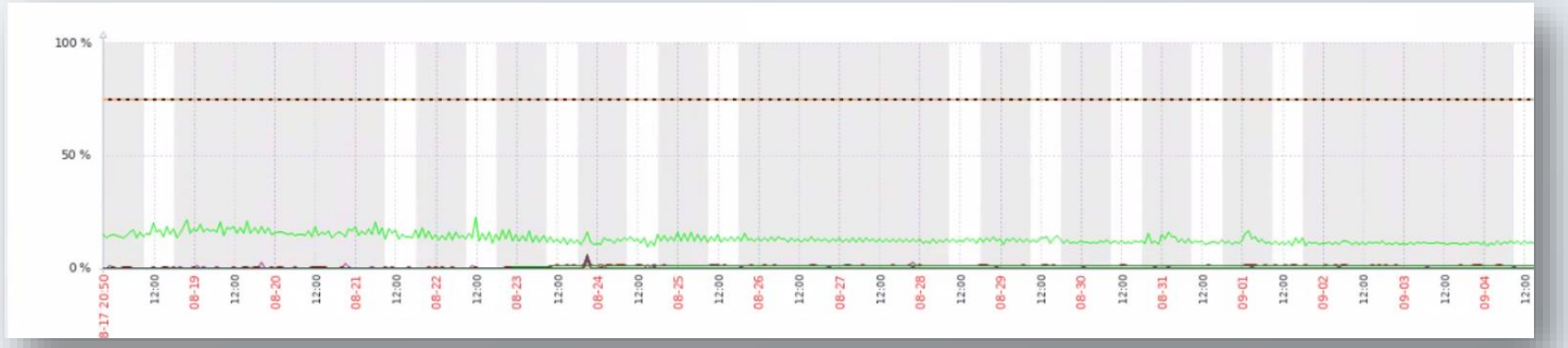
Results

Pollers

Unreachable pollers

Data sender





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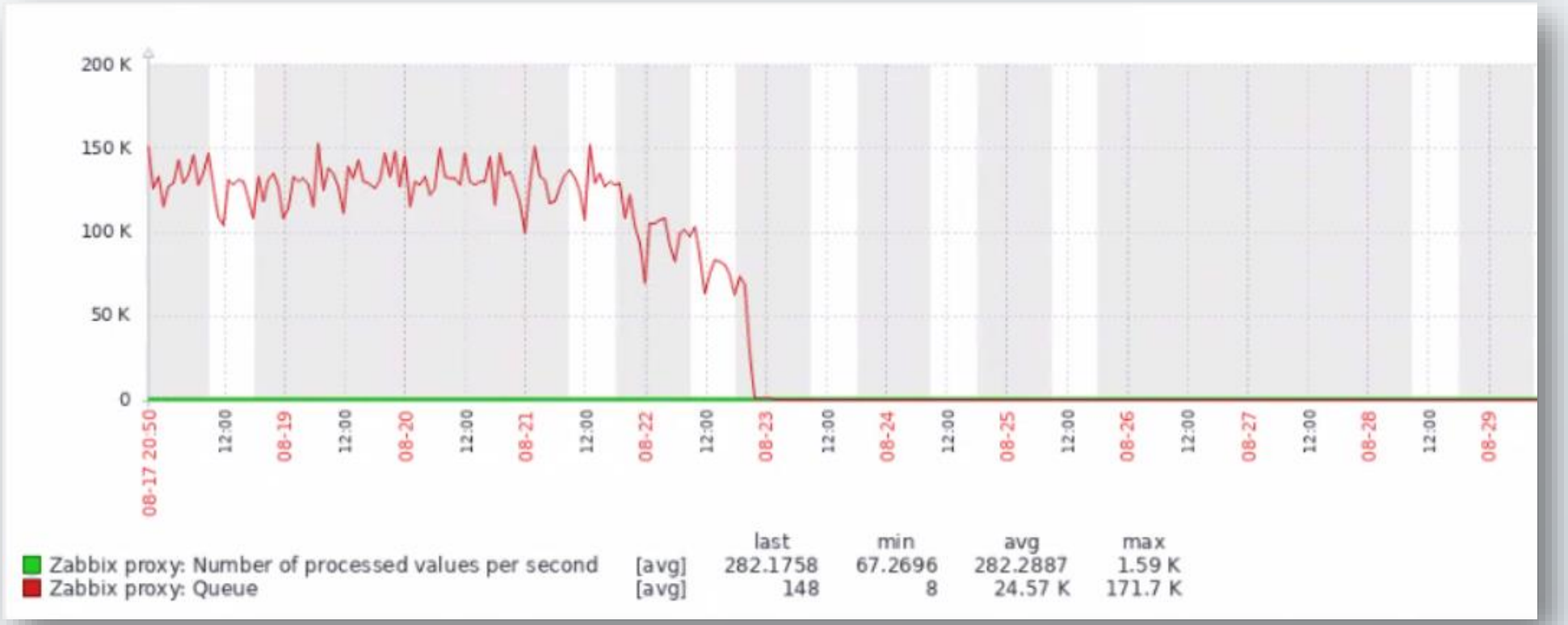
Results



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Results

Poller process utilization by proxies

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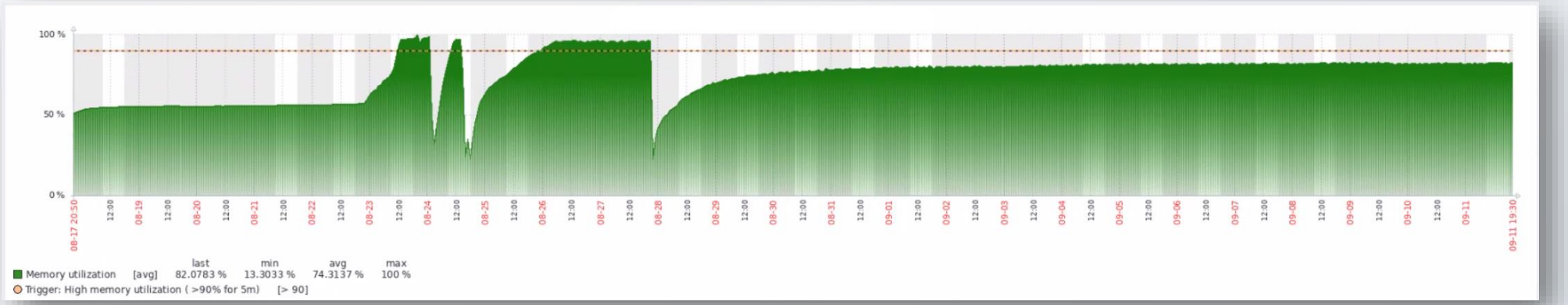
Results

Zabbix memory usage



Most of it used by unreachable pollers.

Dev team promises major improvements with async pollers in 7.0 :
https://support.zabbix.com/browse/ZBXNEXT-8460

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Bugs

ZABBIX BUGS AND ISSUES / ZBX-23200

NULL value in walk[] snmp item can break pre-processing

Closed

Details

Type: Problem report
Priority:
Affects Version/s:
Component/s:
Labels:
Resolution: Fixed

People

Assignee:

ZABBIX BUGS AND ISSUES / ZBX-23607

"SNMP walk to JSON" preprocessing step cannot parse unquoted values that start with a double quote character

Open

Details

Type: Incident report
Priority: Trivial
Affects Version/s: 6.4.8rc1
Component/s: Proxy (P), Server (S)
Labels: None
Resolution: Unresolved
Fix Version/s: None

People

Assignee: Andrejs Sitals
Reporter: Andrejs Sitals

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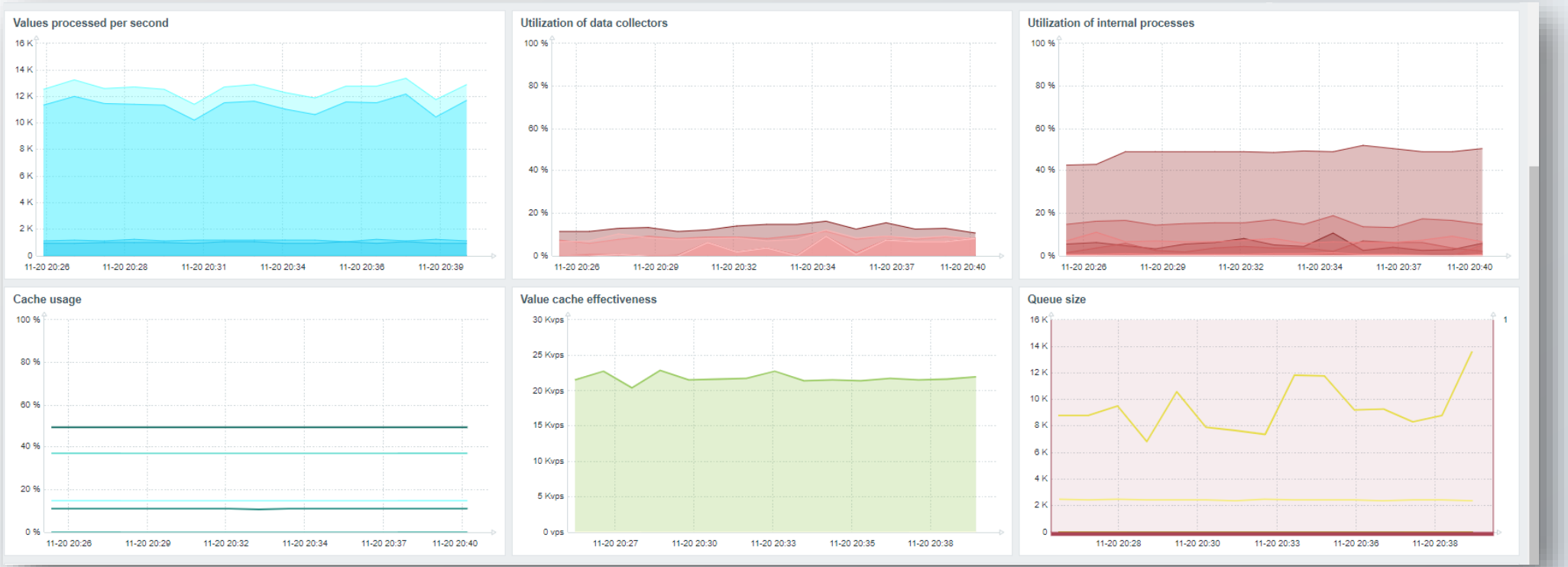
Results



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THANK YOU!

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