



SUMMIT
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IMPLEMENTING DYNAMIC DATA COLLECTION

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Carlos Ortega

12+ años

Monitoring Systems

8+ años

Zabbix Deployments



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About the Client



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Nationwide ISP with over 9k
Routers/Switch/AP

Zabbix Deployment:

- 1 Zabbix Server
- 2 Frontend (NOC/Client)
- 8 Proxy
- MariaDB Cluster (3 Nodes)

Parameter	Value
Zabbix server is running	Yes
Number of hosts (enabled/disabled)	9389
Number of templates	203
Number of items (enabled/disabled/not supported)	669581
Number of triggers (enabled/disabled [problem/ok])	283493
Number of users (online)	62
Required server performance, new values per second	1042.53



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First StEPs



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Database size was increasing rapidly because of:

- Host quantity over 9K
- Monitored Interfaces (2K+ in some Hosts)

Data storage decrease:

- Monitoring of host health: Ping, Interface status
- Monitoring of primary and secondary interfaces at same rate

 **Throttling**

 **OVERRIDES**



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Trouble in the other Side



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Former configurations help us to take control of data storage and syncers, but proxy performance began to decline, because of:

- High timeout configuration due to host in remote cities.
- High percentage of unreachable poller due to power off equipment
- High usage of pinger/pollers

Relaxed Update interval Action

Dynamically update the configuration of items (Update interval), in order to decrease pollers utilization in long term problem events.

- Use Zabbix API to update items configuration.
- Generate script to invoke API methods (curl).
- With Action step increase dynamically update interval.
- With Action Recovery Operation get value back to normal when problem end.

* Name

Scope ☐ Action operation ☐ Manual host action ☐ Manual event action

Type ☐ Webhook ☒ Script ☐ SSH ☐ Telnet ☐ IPMI

Execute on ☐ Zabbix agent ☐ Zabbix server (proxy) ☒ Zabbix server

* Commands

```
curl -k -s -H 'Content-Type: application/json-rpc' -d '{
  "jsonrpc": "2.0",
  "method": "item.update",
  "params": {
    "itemid": "{ITEM.ID}",
    "delay": "{ITEM.DELAY}"
  },
  "auth": "{AUTH.TOKEN}",
  "id": 2
}' http://127.0.0.1/zabbix/api_jsonrpc.php
```

Description

Host group



Disable HOST Action

If a host remains unreachable for a long time maybe it was decommissioned or need a full reposition.

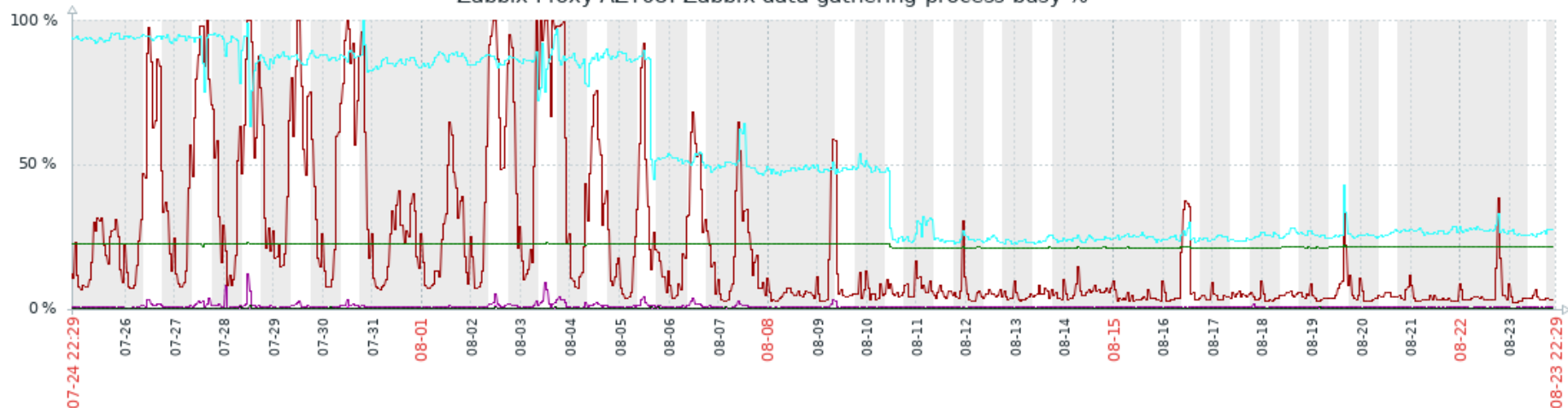
Using the same logic disable the host to avoid unreachable poller congestion.

```
curl -k -s -H 'Content-Type: application/json-rpc' -d  
"{\"jsonrpc\":\"2.0\", \"method\":\"host.update\", \"params\": {\"hostid\":  
\"{HOST.ID}\", \"status\": \"1\"}, \"auth\":\"{$AUTH.TOKEN}\", \"id\":2}"  
http://127.0.0.1/zabbix/api_jsonrpc.php
```



EXPECTED Result

Zabbix Proxy AZT08: Zabbix data gathering process busy %





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Next Steps



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- Configuration made on 5.0, upgrade to 5.4/6.0 in order to optimize scripts using API Tokens.
- Automatically organize host by latency to lower Timeout configuration in some proxies.
- SNMP query using discovery SNMP OID and dependent items for remote host with limited interfaces (Radios/AP)

MASTER



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RAW

OUTPUT

* Name

Type

* Key

* Host interface

* SNMP OID

Type of information

* Update interval

Timestamp	Value
2021-08-11 22:56:24	[{"SNMPINDEX": "1", "IFOPERSTATUS": "1", "IFNAME": "wired0", "IFOUT": "170819625168", "IFIN": "898571683315"}, {"SNMPINDEX": "2", "IFOPERSTATUS": "1", "IFNAME": "apr0", "IFOUT": "108988381469", "IFIN": "30768310271"}, {"SNMPINDEX": "3", "IFOPERSTATUS": "1", "IFNAME": "apr1", "IFOUT": "797121631667", "IFIN": "210211175983"}]
2021-08-11 22:55:25	[{"SNMPINDEX": "1", "IFOPERSTATUS": "1", "IFNAME": "wired0", "IFOUT": "170819470763", "IFIN": "898571053417"}, {"SNMPINDEX": "2", "IFOPERSTATUS": "1", "IFNAME": "apr0", "IFOUT": "108988126308", "IFIN": "30768248452"}, {"SNMPINDEX": "3", "IFOPERSTATUS": "1", "IFNAME": "apr1", "IFOUT": "797121422415", "IFIN": "210211080102"}]

OUTPUT

Interface apr0() (3 items)

Interface apr0(): Bits received	7d	365d	Dependent item	2021-08-11 23:05:24	20.02 Kbps	+13.26 Kbps
net.if.in[ifHCInOctets.2]						
Interface apr0(): Bits sent	7d	365d	Dependent item	2021-08-11 23:05:24	40.32 Kbps	+21.62 Kbps
net.if.out[ifHCOutOctets.2]						
Interface apr0(): Operational status	7d	0	Dependent item	2021-08-11 22:52:24	up (1)	
net.if.status[ifOperStatus.2]						

Interface apr1() (3 items)

Interface apr1(): Bits received	7d	365d	Dependent item	2021-08-11 23:05:24	38.37 Kbps	+19.74 Kbps
net.if.in[ifHCInOctets.3]						
Interface apr1(): Bits sent	7d	365d	Dependent item	2021-08-11 23:05:24	78.59 Kbps	+52.38 Kbps
net.if.out[ifHCOutOctets.3]						
Interface apr1(): Operational status	7d	0	Dependent item	2021-08-11 22:52:24	up (1)	
net.if.status[ifOperStatus.3]						

Interface wired0() (3 items)

Interface wired0(): Bits received	7d	365d	Dependent item	2021-08-11 23:05:24	156.72 Kbps	+100.88 Kbps
net.if.in[ifHCInOctets.1]						
Interface wired0(): Bits sent	7d	365d	Dependent item	2021-08-11 23:05:24	57.4 Kbps	+35.26 Kbps
net.if.out[ifHCOutOctets.1]						
Interface wired0(): Operational status	7d	0	Dependent item	2021-08-11 22:52:24	up (1)	
net.if.status[ifOperStatus.1]						



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THANK YoU



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