



MEETUP ONLINE '21

ZABBIX QUEUE SOLVE DELAYED METRICS

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ZABBIX

SERVER QUEUE

- ✓ All devices are running all the time
- ✓ Each device are reachable by using desired protocol (passive checks)
- ✓ Devices are capable to reach the Zabbix component, deliver metric (active checks)

Queue overview ▾

Items	5 seconds	10 seconds	30 seconds	1 minute	5 minutes	More than 10 minutes
Zabbix agent	0	0	0	0	0	91953
Zabbix agent (active)	901	10	0	25	0	191793
Simple check	8	199	11	2176	2817	29664
SNMP agent	0	0	0	0	0	37
Zabbix internal	0	0	0	11	2	2635
Zabbix aggregate	0	0	0	0	0	0
External check	0	0	0	0	0	0
Database monitor	0	0	0	0	0	0
HTTP agent	0	0	0	0	0	0
IPMI agent	0	0	0	0	0	0
SSH agent	0	0	0	0	0	0
TELNET agent	0	0	0	0	0	0
JMX agent	0	0	0	0	0	0
Calculated	0	20	0	81	179	25166

BASIC MINIMUM

- ✓ Passive checks: Time correct between master and all Zabbix proxy servers

```
$ timedatectl
      Local time: Thu 2021-03-18 19:38:14 EET
      Universal time: Thu 2021-03-18 17:38:14 UTC
      RTC time: Thu 2021-03-18 17:38:14
      Time zone: Europe/Riga (EET, +0200)
System clock synchronized: no
      NTP service: inactive
      RTC in local TZ: no
```

- ✓ Active checks: Time is correct on agent locally

```
date
date /T
time /T
```

HOW TO KEEP TIME CORRECT?

If host is using passive checks, then easy!

Compare a local time of machine with the execution time of this check.

```
{Linux by Zabbix agent:system.localtime.fuzzytime(3m)}=0
```

If hosts is using only active checks, then starting with version 4.2+ we can determine the offset by the help of JavaScript preprocessing step because JavaScript engine the knows server time:

```
return Math.round((new Date()).getTime() / 1000 - value);
```

More info if agent is using active checks only:

<https://blog.zabbix.com/time-is-off-active-zabbix-agent/11676/>

HOW QUEUE WORKS?

Uptime!

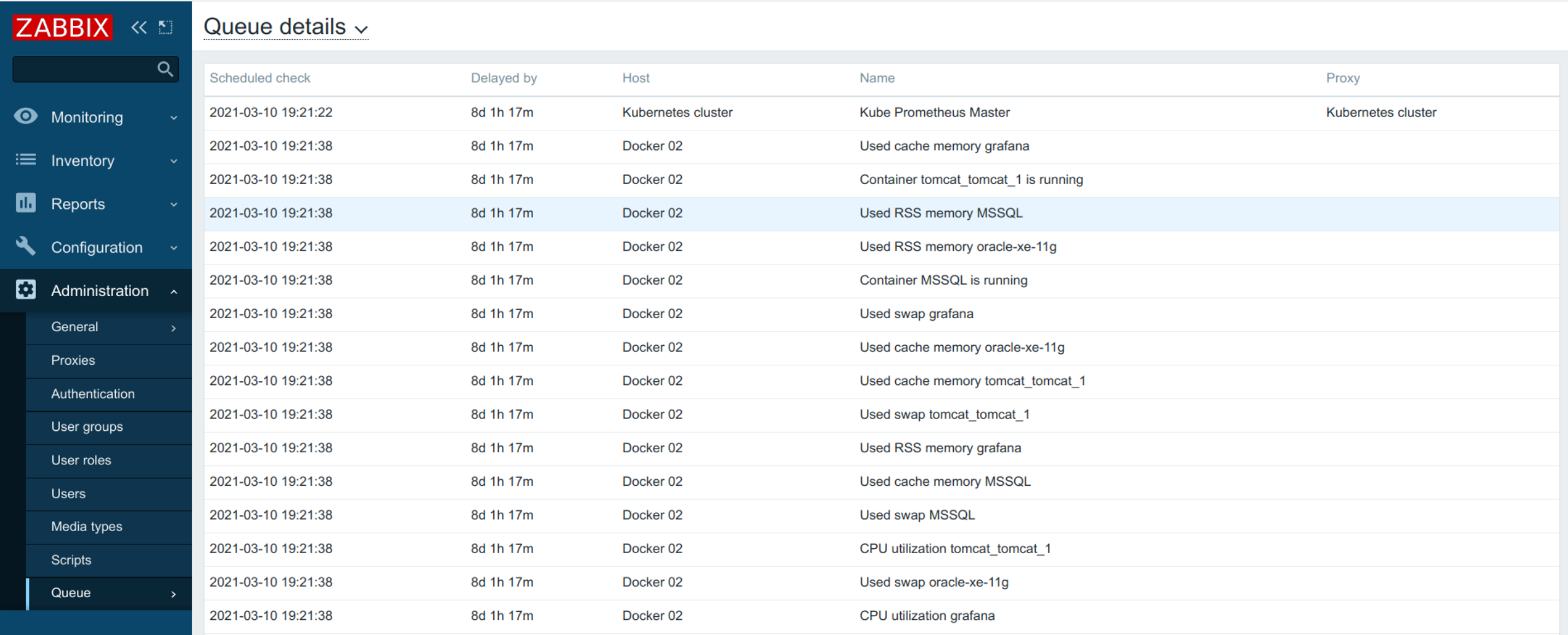
```
# systemctl status zabbix-server
• zabbix-server.service - Zabbix Server
  Loaded: loaded (/usr/lib/systemd/system/zabbix-server.service; enabled; vendor preset: disabled)
  Drop-In: /etc/systemd/system/zabbix-server.service.d
           └─override.conf
  Active: active (running) since Mon 2021-03-01 11:10:35 EET; 2 weeks 3 days ago
Main PID: 28655 (zabbix_server)
  Tasks: 32
  Memory: 38.1M
  CGroup: /system.slice/zabbix-server.service
```

By restarting the component, it will clear up queue.

Restart does not solve queue. It creates an illusion that everything is OK.

QUEUE DETAILS

Queue details are represented in level of item:



The screenshot shows the Zabbix web interface. On the left is a navigation sidebar with categories: Monitoring, Inventory, Reports, Configuration, and Administration. The Administration section is expanded, showing sub-items like General, Proxies, Authentication, User groups, User roles, Users, Media types, Scripts, and Queue. The main content area is titled 'Queue details' and contains a table with the following columns: Scheduled check, Delayed by, Host, Name, and Proxy. The table lists various checks that are delayed by 8 days, 1 hour, and 17 minutes. The checked item 'Used RSS memory MSSQL' is highlighted in blue.

Scheduled check	Delayed by	Host	Name	Proxy
2021-03-10 19:21:22	8d 1h 17m	Kubernetes cluster	Kube Prometheus Master	Kubernetes cluster
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used cache memory grafana	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Container tomcat_tomcat_1 is running	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used RSS memory MSSQL	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used RSS memory oracle-xe-11g	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Container MSSQL is running	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used swap grafana	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used cache memory oracle-xe-11g	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used cache memory tomcat_tomcat_1	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used swap tomcat_tomcat_1	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used RSS memory grafana	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used cache memory MSSQL	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used swap MSSQL	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	CPU utilization tomcat_tomcat_1	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	Used swap oracle-xe-11g	
2021-03-10 19:21:38	8d 1h 17m	Docker 02	CPU utilization grafana	

Section limited to 500 records 😞

Q: What if I have tens of thousands missing metrics?

A: Most likely some devices are completely offline

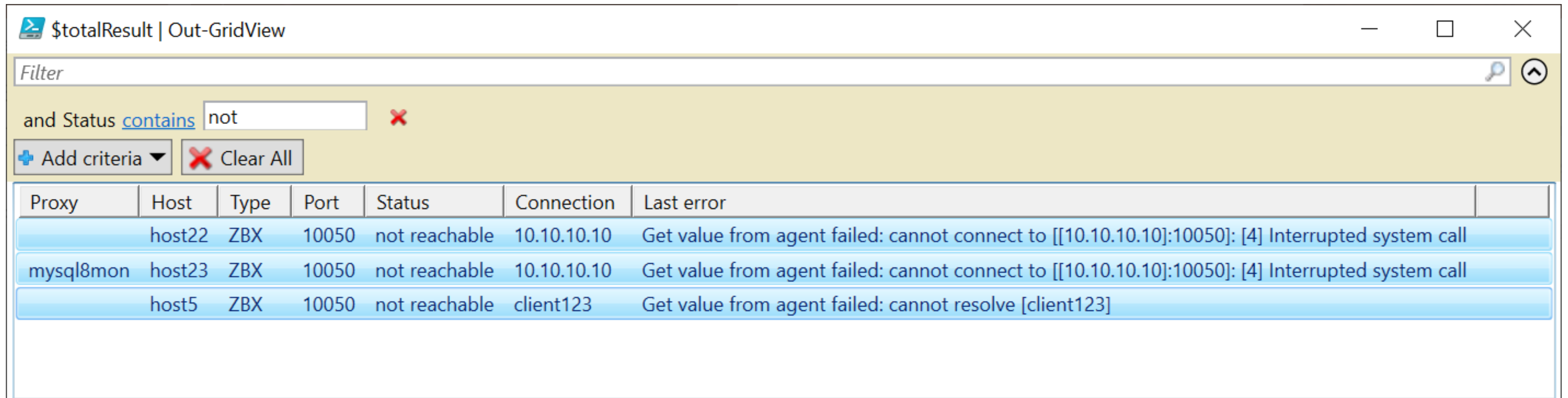
FORGET QUEUE, SOLVE ALL RED HOSTS

For hosts which are using at least one passive checks, we can use API to query error message.

The screenshot shows a monitoring interface with two tabs: 'Availability' and 'Agent encryption'. Under 'Availability', there are buttons for 'ZBX', 'SNMP', 'JMX', and 'IPMI'. Under 'Agent encryption', there is a green button labeled 'NONE'. Below these tabs, a red error message is displayed: 'Get value from agent failed: cannot resolve [client123]'. A small 'x' icon is visible in the top right corner of the error message box.

FORGET QUEUE, SOLVE ALL RED HOSTS

Solution via Windows PowerShell:



The screenshot shows the Zabbix Out-GridView interface. At the top, there is a filter bar with the text "Filter" and a search icon. Below the filter bar, there is a filter criterion: "and Status contains not", with a red 'X' icon to its right. Below the filter bar, there are two buttons: "+ Add criteria" and "Clear All". Below the filter bar, there is a table with the following columns: Proxy, Host, Type, Port, Status, Connection, and Last error. The table contains three rows of data, all of which are highlighted in blue. The first row is for host22, the second for mysql8mon, and the third for host5. All three rows have a status of "not reachable" and a last error message indicating a connection failure.

Proxy	Host	Type	Port	Status	Connection	Last error
	host22	ZBX	10050	not reachable	10.10.10.10	Get value from agent failed: cannot connect to [[10.10.10.10]:10050]: [4] Interrupted system call
mysql8mon	host23	ZBX	10050	not reachable	10.10.10.10	Get value from agent failed: cannot connect to [[10.10.10.10]:10050]: [4] Interrupted system call
	host5	ZBX	10050	not reachable	client123	Get value from agent failed: cannot resolve [client123]

IP address	DNS name	Connect to	Port
127.0.0.1	client123	IP DNS	10050

More about solution:

<https://blog.zabbix.com/summarize-devices-that-are-not-reachable/13219/>

ACTIVE AGENT HOSTS - WORKAROUND

Obtain session token by reaching out frontend:

```
curl http://127.0.0.1/api_jsonrpc.php -s -X POST -H 'Content-Type: application/json' -d \  
'{"jsonrpc":"2.0","method":"user.login","params":{"user":"Admin","password":"zabbix"},"id":1,"auth":null}' | \  
grep -E -o "([0-9a-f]{32,32})" \  
0cf5f7e39de997d9a02593ab973acf85
```

Query itemid's by using queue.get method:

```
zabbix_get -s 127.0.0.1 -p 10051 \  
-k '{"request":"queue.get","sid":"0cf5f7e39de997d9a02593ab973acf85","type":"details","limit":"9999999"}'
```

Output:

```
{"response":"success","data":[{"itemid":322185,"nextcheck":1614589895}, \  
{"itemid":322191,"nextcheck":1614589895}, {"itemid":322188,"nextcheck":1614589895}, \  
{"itemid":322187,"nextcheck":1614590435} ],"total":4}
```

PUT JSON IN EXTERNAL FILE

Put item IDs in external file:

```
zabbix_get -s 127.0.0.1 -p 10051  
-k '{"request":"queue.get","sid":"0cf5f7e39de997d9a02593ab973acf85","type":"details","limit":"9999999"}' >  
/tmp/queue.json
```

PASSWORDLESS ACCESS TO DATABASE

MySQL:

```
# cat ~/.my.cnf
[client]
host=127.0.0.1
user=zabbix
password=zabbix
```

Postgres:

```
# cat ~/.pgpass
127.0.0.1:5432:*:zabbix:zabbix
```

SUMMARIZE

MySQL:

```
grep -oP 'itemid\":"\K\d+' /tmp/queue.json | tr '\n' ',' | sed 's|.$||' | xargs -i echo "
SELECT p.host AS proxy, hosts.host, items.key_
FROM hosts
JOIN items ON (hosts.hostid = items.hostid)
JOIN hosts proxy ON (hosts.proxy_hostid=proxy.hostid)
LEFT JOIN hosts p ON (hosts.proxy_hostid=p.hostid)
WHERE items.itemid IN ({}
;" | mysql --table zabbixDB > /tmp/queue.txt
```

Postgres:

```
grep -oP 'itemid\":"\K\d+' /tmp/queue.json | tr '\n' ',' | sed 's|.$||' | xargs -i echo "
SELECT p.host AS proxy, hosts.host, items.key_
FROM hosts
JOIN items ON (hosts.hostid = items.hostid)
JOIN hosts proxy ON (hosts.proxy_hostid=proxy.hostid)
LEFT JOIN hosts p ON (hosts.proxy_hostid=p.hostid)
WHERE items.itemid IN ({}
;" | psql zabbixDB > /tmp/queue.txt
```

OUTPUT

proxy	host	key_
broceni	GUNTA-NOTE	RebootRequired
broceni	GUNTA-NOTE	proc_info[msiexec.exe]
broceni	GUNTA-NOTE	vfs.dir.count[C:\,^Windows.old\$,,,0]
broceni	GUNTA-NOTE	vfs.file.exists[C:\Windows\Memory.dmp]
broceni	GUNTA-NOTE	vfs.file.exists[C:\hiberfil.sys]
broceni	GUNTA-NOTE	agent.ping
broceni	GUNTA-NOTE	wmi.getall[root\cimv2,select * from Win32_OperatingSystem]
broceni	GUNTA-NOTE	system.localtime
broceni	GUNTA-NOTE	agent.version
broceni	GUNTA-NOTE	system.localtime[utc]



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QUESTIONS?

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THANK YOU!

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