"WHAT’S NEW IN ZABBIX 5.2"

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ZABBIX 5.2

MORE THAN 35 NEW FEATURES AND FUNCTIONAL IMPROVEMENTS
SYNTHETIC MONITORING

FREEDOM TO MONITOR EVERYTHING
WHY?

Typical use cases

- Support of complex multi-step scripted monitoring scenarios
- Advanced availability checks
- Complex interaction with different HTTP APIs
MULTIPLE STEPS TO GET DATA

Connect to:
http://{HOST.CONN}/api

Connect to:
http://{HOST.CONN}/status/
(using AUTH.TOKEN)

```
{
    ...
    "AUTH.TOKEN":"h99VithCe8VhagFBygf81bVDb"
    ...
}
```

```
{
    ...
    "SESSIONS.ACTIVE":"5",
    "SESSIONS.INACTIVE":"2",
    ...
}
```

JSONPath:
$."SESSIONS.INACTIVE"

JSONPath:
$."SESSIONS.ACTIVE"
CHECK IF WHOLE PROCESS WORKS: ZABBIX API

"method": "host.create"

"method": "host.get",
"params": {
"filter": {
"hostid": 10658
}
}

"method": "host.delete",
"params": [10658]

IF FAIL
return 0

"result": {
"hostids": [
"10658"
]
}

IF FAIL
return 0

return 1

IF FAIL
return 0

IF FAIL
return 0
CALCULATE SUM OF UNKNOWN PARTS

Connect to:
http://{HOST.CONN}/api

[{
"CLIENT.NAME": "CLIENT1",
"CLIENT.URL": "https://client1.domain.com/status"},
{"CLIENT.NAME": "CLIENT2",
"CLIENT.URL": "https://client2.domain.com/status"},
...

Connect to:
https://client1.domain.com/status/

Connect to:
https://client2.domain.com/status/

Connect to:
....

Connect to:
https://client1.domain.com/status/

Connect to:
https://client2.domain.com/status/

sum(get "CLIENT1.URL" + get "CLIENT2.URL" + get "CLIENT3.URL"
NEW ITEM TYPE SCRIPT

* Name: Script data collector
* Type: Script
* Key: script.data.collector

Parameters:
- **Name**: host, Value: (HOST:CONN), Action: Remove
- **Name**: endpoint, Value: (ENDPOINT), Action: Remove

JavaScript:
```
function request(method, query, data)
{
    var response;
    url = params.url + query;
    request = new XMLHttpRequest();
    request.send('content-type: application/json');
    response = request.responseText;
    return response;
}
```
STORAGE OF SECRETS IN EXTERNAL VAULT
WHY?

Benefits

✔ All sensitive information is kept outside of Zabbix in a secure place
✔ Therefore no secret data is stored in Zabbix DB
✔ Sensitive data: passwords, API tokens, usernames, etc
ZABBIX INSIGHTS

LET'S LOOK AT LONGER PERIODS OF DATA
“TOTAL AMOUNT OF NETWORK TRAFFIC INCREASED BY 28% IN SEPTEMBER”
“AMOUNT OF ON-SITE CUSTOMERS DECREASED BY 12% LAST WEEK”
WHY?

Benefits

- Ability to analyze long term data efficiently using new trigger functions
- Zabbix will provide you with information about anomalies
GRANULAR CONTROL OF USER PERMISSIONS
WHY?

Benefits

- Granular control of user permissions
- Control user operations:
  - problem acknowledgements
  - creation and editing of maps and dashboards
  - management of maintenance times
  - etc
- Control access to API and its methods
IOT MONITORING
SUPPORT OF **MODBUS** AND **MQTT** PROTOCOLS
MODBUS

- Modbus has become a de facto standard communication protocol and is now a commonly available means of connecting industrial electronic devices.
- Works on agent and agent2 tcp or serial connections
**MODBUS**

modbus.get[endpoint,<slave id>,<function>,<address>,<count>,<type>,<endianness>,<offset>]

- **endpoint** - endpoint defined as protocol://connection_string
- **slave id** - slave ID
- **function** - Modbus function
- **address** - address of first registry, coil or input
- **count** - number of records to read
- **type** - type of data
- **endianness** - endianness configuration
- **offset** - number of registers, starting from 'address', the results of which will be discarded.
MODBUS

- Returns json
- Examples:
  - modbus.get[“tcp://192.168.6.1:511”]
  - Modbus.get[“rtu://COM1:9600:8n”]
MQTT

- MQTT is a standard messaging protocol for the Internet of Things (IoT)
- Native solution for monitoring messages published by MQTT brokers
- Supported by agent2 Active check only
MQTT

`mqtt.get[<broker_url>,topic,<username>,<password>]`

- **broker_url** - MQTT broker URL (if empty, localhost with port 1883 is used)
- **topic** - MQTT topic (mandatory). Wildcards (+,#) are supported
- **username, password** - authentication credentials (if required)

- Subscribes to a specific topic or topics (with wildcards) of the provided broker and waits for publications.

- Examples:
  
  `mqtt.get["tcp://host:1883","path/to/topic"]`
  
  `mqtt.get["localhost","path/to/topic"]`
TIMEZONES FOR EACH USER
LOAD BALANCING FOR UI AND API
LOAD BALANCING UI AND API
YAML
FOR IMPORT/EXPORT
YAML FOR IMPORT/EXPORT

### JSON

```json
  "zabbix_export": {
    "version": "5.2",
    "date": "2020-10-22T16:55:52Z",
    "groups": [
      {
        "name": "Templates/Applications"
      },
      "templates": [
        {
          "template": "Zabbix Server",
          "name": "Zabbix Server",
          "groups": [
            {
              "name": "Templates/Applications"
            }
          ],
          "applications": [
            {
              "name": "Zabbix server"
            }
          ],
          "items": [
            {
              "name": "Zabbix LLD queue",
              "type": "INTERNAL",
              "key": "zabbix[lld_queue]",
              "history": "1w",
              "description": "Count of values enqueued in the preprocessing queue."
            }
          ],
          "name": "Zabbix server"
        }
      ],
      "name": "Templates/Applications"
    }
  }
```

### YAML

```yaml
zabbix_export:
  version: '5.2'
  date: '2020-10-22T16:55:52Z'
  groups:
    - name: Templates/Applications
  templates:
    - template: Zabbix Server
      name: Zabbix Server
      groups:
        - name: Templates/Applications
      applications:
        - name: Zabbix server
      items:
        - name: Zabbix LLD queue
          type: INTERNAL
          key: zabbix[lld_queue]
          history: 1w
          description: 'Count of values enqueued in the preprocessing queue.'
          applications:
            - name: Zabbix server
```
## TEMPLATE IMPROVEMENTS

- **Simpler template names**

<table>
<thead>
<tr>
<th>Template</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apache by Zabbix agent</td>
<td></td>
</tr>
<tr>
<td>Ceph by Zabbix Agent2</td>
<td></td>
</tr>
<tr>
<td>HAProxy by Zabbix agent</td>
<td></td>
</tr>
<tr>
<td>IIS by Zabbix agent</td>
<td></td>
</tr>
<tr>
<td>IIS by Zabbix agent active</td>
<td></td>
</tr>
<tr>
<td>Linux block devices by Zabbix agent</td>
<td></td>
</tr>
<tr>
<td>Linux block devices by Zabbix agent active</td>
<td></td>
</tr>
<tr>
<td>Linux by Zabbix agent</td>
<td></td>
</tr>
<tr>
<td>Linux by Zabbix agent active</td>
<td></td>
</tr>
<tr>
<td>Linux CPU by Zabbix agent</td>
<td></td>
</tr>
<tr>
<td>Linux CPU by Zabbix agent active</td>
<td></td>
</tr>
<tr>
<td>Linux filesystems by Zabbix agent</td>
<td></td>
</tr>
<tr>
<td>Linux filesystems by Zabbix agent active</td>
<td></td>
</tr>
<tr>
<td>Linux generic by Zabbix agent</td>
<td></td>
</tr>
<tr>
<td>Linux generic by Zabbix agent active</td>
<td></td>
</tr>
</tbody>
</table>
TEMPLATE IMPROVEMENTS

- Templated screens converted to dashboards
TEMPLATE IMPROVEMENTS

See all hosts linked to template
### TEMPLATE IMPROVEMENTS

- Number of templates in System information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zabbix server is running</td>
<td>Yes</td>
<td>localhost:10051</td>
</tr>
<tr>
<td>Number of hosts (enabled/disabled)</td>
<td>1</td>
<td>1 / 0</td>
</tr>
<tr>
<td>Number of templates</td>
<td>146</td>
<td></td>
</tr>
<tr>
<td>Number of items (enabled/disabled/not supported)</td>
<td>122</td>
<td>113 / 0 / 9</td>
</tr>
<tr>
<td>Number of triggers (enabled/disabled (problem/ok))</td>
<td>61</td>
<td>61 / 0 [1 / 60]</td>
</tr>
<tr>
<td>Number of users (online)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Required server performance, new values per second</td>
<td>1.54</td>
<td></td>
</tr>
</tbody>
</table>
10

DISCOVERY AND CLOUD MONITORING
### DISCOVERY AND CLOUD MONITORING

- Host interfaces can be discovered from LLD

<table>
<thead>
<tr>
<th>Interfaces</th>
<th>Inherit</th>
<th>Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>IP address</td>
<td>DNS name</td>
</tr>
<tr>
<td>Agent</td>
<td>(#VM.IP)</td>
<td></td>
</tr>
</tbody>
</table>

- Hosts without interfaces
- Tags on host prototypes tags from any discovery macro
BETTER UI
UI IMPROVEMENTS

- Save filters
UI IMPROVEMENTS

- No more tabs in maintenance definitions
UI IMPROVEMENTS

Show clearly that a tab in Zabbix UI contains non-empty list
UI IMPROVEMENTS

Default language
UI IMPROVEMENTS

- Essential configuration parameters moved from defines.in.php to Zabbix UI

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group for discovered hosts</td>
<td>Discovered hosts</td>
</tr>
<tr>
<td>Default host inventory mode</td>
<td>Disabled</td>
</tr>
<tr>
<td>User group for database dump message</td>
<td>Zabbix administrators</td>
</tr>
<tr>
<td>Log unmatched SNMP traps</td>
<td></td>
</tr>
<tr>
<td>Authorization</td>
<td></td>
</tr>
<tr>
<td>* Login attempts</td>
<td>5</td>
</tr>
<tr>
<td>* Login blocking interval</td>
<td>30s</td>
</tr>
<tr>
<td>Security</td>
<td></td>
</tr>
<tr>
<td>Validate URI schemes</td>
<td></td>
</tr>
<tr>
<td>Valid URI schemes</td>
<td><a href="http://example.com">http://example.com</a></td>
</tr>
<tr>
<td>X-Frame-Options HTTP header</td>
<td>SAMEORIGIN</td>
</tr>
<tr>
<td>Use iframe sandboxing</td>
<td></td>
</tr>
<tr>
<td>iframe sandboxing exceptions</td>
<td></td>
</tr>
<tr>
<td>Communication with Zabbix server</td>
<td></td>
</tr>
<tr>
<td>* Network timeout</td>
<td>3s</td>
</tr>
<tr>
<td>* Connection timeout</td>
<td>26</td>
</tr>
<tr>
<td>* Network timeout for media type test</td>
<td>60s</td>
</tr>
<tr>
<td>* Network timeout for script execution</td>
<td>60s</td>
</tr>
<tr>
<td>* Network timeout for zabbixui</td>
<td>60s</td>
</tr>
</tbody>
</table>

Update | Reset defaults
UI IMPROVEMENTS

SNMP settings in test item window

- Host address: 127.0.0.1
- SNMP version: SNMPv2
- SNMP community: public
- Port: 161
- Value
- Previous value
- End of line sequence: LF, CRLF
- Get value
- Time: now
- Prev. time
- Get value and test
UI IMPROVEMENTS

Filters and additional details in list of dashboards
BETTER PREPROCESSING
PREPROCESSING IMPROVEMENTS

- Macros in javascript preprocessing (also backported to 5.0)
- Check for not supported value - override item if it becomes unsupported
OTHER IMPROVEMENTS
OTHER IMPROVEMENTS

```
[root@52 ~]# zabbix_server -R diaginfo=valuecache
zabbix_server [191]: command sent successfully
[root@52 ~]# tail -n 30 /var/log/zabbix/zabbix_server.log
1391:20201022:212638.709 itemid:23264 values:16 request.values:11
1391:20201022:212638.709 itemid:23276 values:16 request.values:11
1391:20201022:212638.709 itemid:23266 values:16 request.values:11
1391:20201022:212638.709 top.request.values:
1391:20201022:212638.709 itemid:32463 values:104 request.values:61
1391:20201022:212638.709 itemid:32462 values:104 request.values:61
1391:20201022:212638.709 itemid:23258 values:37 request.values:31
1391:20201022:212638.709 itemid:32441 values:21 request.values:16
1391:20201022:212638.709 itemid:32443 values:19 request.values:16
1391:20201022:212638.709 itemid:23259 values:16 request.values:11
1391:20201022:212638.709 itemid:29823 values:16 request.values:11
1391:20201022:212638.709 itemid:25668 values:16 request.values:11
1391:20201022:212638.709 itemid:23273 values:16 request.values:11
1391:20201022:212638.709 itemid:23265 values:16 request.values:11
1391:20201022:212638.709 itemid:23274 values:16 request.values:11
1391:20201022:212638.709 itemid:26667 values:16 request.values:11
1391:20201022:212638.709 itemid:23269 values:16 request.values:11
1391:20201022:212638.709 itemid:28538 values:16 request.values:11
1391:20201022:212638.709 itemid:23264 values:16 request.values:11
1391:20201022:212638.709 itemid:23276 values:16 request.values:11
1391:20201022:212638.709 itemid:23266 values:16 request.values:11
1391:20201022:212638.709 itemid:23268 values:16 request.values:11
1391:20201022:212638.709 itemid:23278 values:16 request.values:11
1391:20201022:212638.709 itemid:23629 values:16 request.values:11
1391:20201022:212638.709 itemid:25371 values:16 request.values:11
1391:20201022:212638.709 itemid:23275 values:16 request.values:11
1391:20201022:212638.709 itemid:23260 values:16 request.values:11
1391:20201022:212638.709 itemid:23257 values:13 request.values:11
1391:20201022:212638.709 itemid:28536 values:13 request.values:11
1391:20201022:212638.709 ==
```
OTHER IMPROVEMENTS

- UI protected from ability to check user existence
- Simpler schedule for unsupported items
- Ability to mass-update item Timeout
- Retrieve HTTP response headers from CurlHttpRequest object in Webhooks
- Ability to specify default search path for user parameters
- Max length of user macro values - 2048 characters
OTHER IMPROVEMENTS

- Active agent can work as multiple hosts (Hostname=host1,host2,host3)
- Official support of Docker images
- Eventlog related macros in operational data
- Support of user macros in item description
HOW TO UPGRADE
HOW TO UPGRADE FROM 5.0?

- Backup DB
- Upgrade packages (Zabbix server, Frontend)
- Restart zabbix_server
- Watch the log file, Zabbix will start DB schema upgrade automatically
- Upgrade all proxies

- Optional – update agents.
UPGRADE ZABBIX

LET ZABBIX ENGINEERS DO THE JOB

ORDER NEWEST RELEASE UPGRADE AND ENJOY ALL THE NEW FEATURE EFFORTLESSLY

What You Get
- Fully functioning instance upgraded to the latest LTS or Standard Release version
- Fully documented procedure upon task completion
- Basic Zabbix health check and performance tuning

Your Benefits
- Minimal downtime
- Zero data loss
- Fast and efficient upgrade according to Zabbix best practices
Thank you!