The journey to success
Whoami?

Brian van Baekel

- Zabbix consultant
- Zabbix trainer
- Network engineer

Opensource ICT Solutions
Whoami?

Nathan Liefting

- Network engineer
- Zabbix management/enthusiast
Current situation

- Monitoring

- Servers
- Network
Old situation

LibreNMS

Device-summary-horiz

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Up</th>
<th>Down</th>
<th>Ignored</th>
<th>Disabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devices</td>
<td>236</td>
<td>214</td>
<td>9</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Ports</td>
<td>25223</td>
<td>17789</td>
<td>2542</td>
<td>875</td>
<td>2818</td>
</tr>
</tbody>
</table>

Availability-map

Total hosts: up: 214, warn: 0, down: 9

Alerts

- 2019-11-28 15:05:01: Device up, admin route important
- 2019-10-28 15:05:01: Internal eBGP session down
- 2019-10-15 08:16:01: Memory over limit
- 2019-10-15 08:16:01: Storage over limit
Current situation

- Dashboard

**Dashboards**

- Name △
- TRUE Core Routers
- TRUE Default dashboard
- TRUE Maps
- TRUE Zabbix server health

**TRUE Default dashboard**

<table>
<thead>
<tr>
<th>Time</th>
<th>Recovery time</th>
<th>Status</th>
<th>Info</th>
<th>Host</th>
<th>Problem + Severity</th>
<th>Duration</th>
<th>Ack</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>21:19:23</td>
<td>21:20:23</td>
<td></td>
<td></td>
<td></td>
<td>Yellow Alarm on</td>
<td>2h</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Problems**

<table>
<thead>
<tr>
<th>Time</th>
<th>Info</th>
<th>Host</th>
<th>Problem + Severity</th>
<th>Duration</th>
<th>Ack</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-10-30 19:13:13</td>
<td>0.3-c01</td>
<td></td>
<td>Yellow Alarm on 0.3-c01</td>
<td>3m 6d 2h</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>2019-10-13 19:34:56</td>
<td></td>
<td></td>
<td>Free disk space is less than 20% on volume /</td>
<td>3m 2d 2h</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

**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></td>
</tr>
<tr>
<td>Number of hosts (enabled/disabled/templates)</td>
<td>348</td>
<td>230 / 5 / 111</td>
</tr>
</tbody>
</table>

10 March 2020
Old situation

• LibreNMS Graphing
Current situation

• Zabbix Graphing

Bug! (ZBX-1977)
Old situation

- LibreNMS Alerting

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Rule</th>
<th>Severity</th>
<th>Status</th>
<th>Extra</th>
<th>Enabled</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>Devices up/down</td>
<td>macros.device_down = 1</td>
<td>critical</td>
<td></td>
<td></td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>#2</td>
<td>Device rebooted</td>
<td>devices.uptime &lt; 300 AND macros.device = 1</td>
<td>warning</td>
<td></td>
<td></td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>#3</td>
<td>iBGP Session down</td>
<td>bgpPeers.bgpPeerState != &quot;established&quot; AND macros.device_up = 1</td>
<td>critical</td>
<td></td>
<td></td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AND bgpPeers.bgpPeerRemoteAs = 15703</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>BGP Session established</td>
<td>bgpPeers.bgpPeerFsmEstablishedTime &lt; 300 AND bgpPeers.bgpPeerState = &quot;established&quot;</td>
<td>ok</td>
<td></td>
<td></td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#5</td>
<td>Port down now</td>
<td>macros.port_now_down = 1 AND devices.hostname NOT REGEXP ^.<em>dcs.</em>$ AND devices.hostname NOT REGEXP ^.<em>mgmt.</em>$ AND devices.device_id != 72 AND devices.device_id != 46 AND devices.device_id != 92 AND devices.device_id != 248 AND ports.port_id != 71402</td>
<td>warning</td>
<td></td>
<td></td>
<td>ON</td>
<td></td>
</tr>
</tbody>
</table>

10 March 2020
## Current situation

<table>
<thead>
<tr>
<th>Repository Name</th>
<th>Stars</th>
<th>Updated Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>opsgenie-integration</td>
<td><img src="https://s3-us-west-2.amazonaws.com/propeller/propeller.png" alt="Star" /></td>
<td>3 days ago</td>
</tr>
<tr>
<td>Larcorba-Zabbix-templates-Juniper-QFX5200-SNMPv3</td>
<td><img src="https://s3-us-west-2.amazonaws.com/propeller/propeller.png" alt="Star" /></td>
<td>17 Nov 2019</td>
</tr>
<tr>
<td>Larcorba-Zabbix-templates-Juniper-QFX5110-SNMPv3</td>
<td><img src="https://s3-us-west-2.amazonaws.com/propeller/propeller.png" alt="Star" /></td>
<td>17 Nov 2019</td>
</tr>
<tr>
<td>Larcorba-Zabbix-templates-Fortigate-General-SNMPv3</td>
<td><img src="https://s3-us-west-2.amazonaws.com/propeller/propeller.png" alt="Star" /></td>
<td>17 Nov 2019</td>
</tr>
<tr>
<td>Larcorba-Zabbix-templates-Juniper-EX-SNMPv3</td>
<td><img src="https://s3-us-west-2.amazonaws.com/propeller/propeller.png" alt="Star" /></td>
<td>17 Nov 2019</td>
</tr>
<tr>
<td>Larcorba-Zabbix-templates-Juniper-MX-SNMPv3</td>
<td><img src="https://s3-us-west-2.amazonaws.com/propeller/propeller.png" alt="Star" /></td>
<td>17 Nov 2019</td>
</tr>
</tbody>
</table>

- **Zabbix Alerting**
Old situation

• Automation
Current situation

- Automation

```python
import requests
import json

url = "https://meseeks.true.nl/api_jsonrpc.php"

def get_api_token(url):
    payload = {
        "jsonrpc": "2.0",
        "method": "user.login",
        "params": {
            "user": "python-api",
            "password": "1",
            "auth": "None"
        }
    }

    resp = requests.post(url=url, json=payload)
    out = resp.json()

    return out['result']

def get_hosts(api_token, url):
    payload = {
        "jsonrpc": "2.0",
        "method": "host.get",
        "params": {
            "output": [
                "hostid",
                "host"
            ],
            "selectInterfaces": [
                "interfaceid",
                "ip",
                "main"
            ],
            "id": 2,
            "auth": api_token
        }
    }

    resp = requests.post(url=url, json=payload)
    out = resp.json()

    return out['result']
```

- Autofil /etc/hosts file on our jump host 'Unity' using the Zabbix API
Current situation

• Alerting

• Telegram

• Opsgenie

PROBLEM

PROBLEM: hybrid-02 1 - CPU usage above 80% (Warning)
Host: hybrid-02
I'm Mr. Meeseeks look at me!

OK

OK: hybrid-02 1 - CPU usage above 80% (Warning)
Host: hybrid-02
Ooooh, okay!
Current situation

• OpsGenie why? How?

Zabbix + OpsGenie

All Categories  Notifications & Alerting  Official Templates
Current situation

• OpsGenie why? How?

Escalation policies

- Networking escalation
  - 0 m: On call users in Networking_schedule, if not acknowledged
  - 15 m: Next user in Networking_schedule, if not acknowledged
  - 25 m: On call users in Crisis Managers_schedule, if not acknowledged
Current situation

• OpsGenie integration caveats

ZABBIX FEATURE REQUESTS / ZBXNEXT-5586

Opsgenie webhook integration
Current situation

• OpsGenie solution
Current situation

• OpsGenie solution

```go
func parseFlags(map[string]string{
    apiKey := flag.String("apiKey", "", "apiKey")
    triggerName := flag.String("triggerName", "", "TRIGGER_NAME")
    triggerId := flag.String("triggerId", "", "TRIGGER_ID")
    triggerStatus := flag.String("triggerStatus", "", "TRIGGER_STATUSEVENT.ACK.STATUS")
    triggerSeverity := flag.String("triggerSeverity", "", "TRIGGER.SEVERITY")
    triggerDescription := flag.String("triggerDescription", "", "TRIGGER.DESCRIPTION")
    triggerUrl := flag.String("triggerUrl", "", "TRIGGER.URL")
    triggerValue := flag.String("triggerValue", "", "TRIGGER.VALUE")
    triggerHostGroupName := flag.String("triggerHostGroupName", "", "TRIGGER.HOSTGROUP.NAME")
    hostName := flag.String("hostName", "", "HOSTNAME")
    ipAddress := flag.String("ipAddress", "", "IPADDRESS")
    date := flag.String("date", "", "DATE")
    time := flag.String("time", "", "TIME")
    itemKey := flag.String("itemKey", "", "ITEM.KEY")
    itemValue := flag.String("itemValue", "", "ITEM.VALUE")
    eventId := flag.String("eventId", "", "EVENT.ID")
    recoveryEventStatus := flag.String("recoveryEventStatus", "", "EVENT.RECOVERY.STATUS")
    tags := flag.String("tags", "", "tags")
    responders := flag.String("responders", "", "responders")
    logPath := flag.String("logPath", "", "LOGPATH")
}
```

10 March 2020
Current situation

• OpsGenie solution

Jan 31, 2020 3:06 PM

шей alertAction • System

Alert acknowledged via Zabbix[Zabbix-Acknowledge Alert] with incomingDataId[5ef52b09-31e3-47a0-baf0-5a56 8ed6dc2e]

2020-01-31 15:06:53

Acknowledged by Zabbix via Opsgenie
Future

• Datadog -> Zabbix (if allowed...)
• Statuspage
Future

• Proxy off-loading
• Redundancy
Thank you

Questions?