MONITORING IN TIME AND RELATIVE DIMENSIONS IN SPACE

Monitoring in multiple dimensions

Sven Putteneers

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BUSINESS

AGENDA

1 Our setup

2 Problem statement

3 Initial approach

4 Current solution

5 Example alert action

6 Future developments

7 Conclusion

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INTRODUCTION

Who am I, who are we?

INTRODUCTION

$ whoami

- Sven Putteneers
- 20+ years of Linux experience
- Monitoring has been part of my job for 3.5 years
- I ♥ Zabbix

INTRODUCTION

Who are we

- Now
  - Telenet BVBA
  - One of the largest telecom operators in Belgium
  - Somewhat recently acquired Nextel NV
- Past
  - Nextel NV
  - Telecom integrator
  - Lots of equipment on customer premises
  - Monitoring as a service
  - Multiple teams

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OUR SETUP

OUR SETUP

- Zabbix LTS (we're currently on 4.0)
- ~1700 VPS
- We offer monitoring as a service
  - Heavy use of proxies
  - Different kinds of equipment to monitor and support
  - Multiple alarm regimes
    - 24×7
    - 8×5
    - No active alerts (useful for troubleshooting issues)
- Zabbix is the standby paging service

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PROBLEM STATEMENT

Multi-tenancy, multiple teams, multiple alarm regimes… Ai ai ai!

AN INSPIRATIONAL QUOTE

- Monitoring is the art of getting the right information in front of the right people at the right time.
  – *Source unknown*

PROBLEM STATEMENT

Monitoring in multiple dimensions

- Who must receive an alert?
  - Each technology is supported by a different team
- When to send alerts
  - Not all customers want 24×7 support
  - We don’t want to wake on-call people when it’s not needed
- Which customer does a device belong to?
- Automatic incident ticket creation is sometimes required
- … and we want to keep this maintainable

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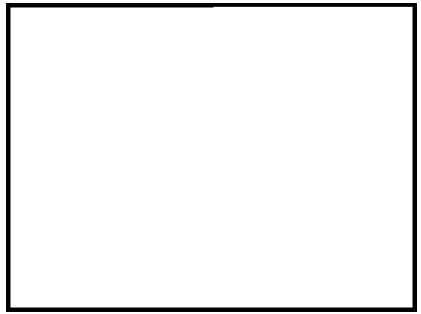

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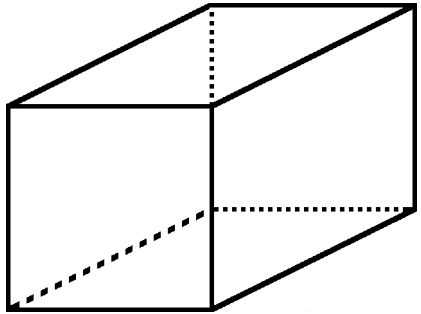

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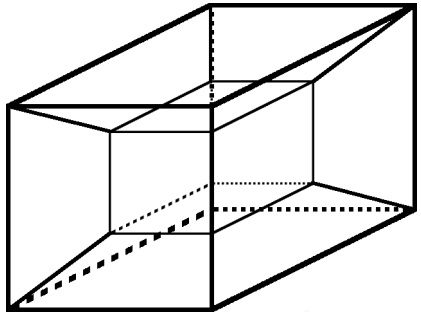

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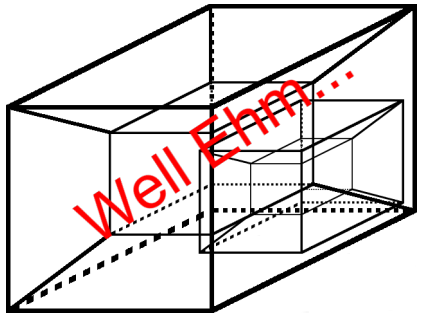

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INITIAL APPROACH

First implementation and its downsides

INITIAL APPROACH

First implementation

- Who
  - Alarms are sent to the team that is responsible for “most” devices
- When
  - Property of the customer
  - **All** devices for a given customer follow the same regime
- Which customer does a device belong to?
  - Customer name is part of the (Zabbix) hostname of the device
- All alarms of severity >= High generate a support ticket

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INITIAL APPROACH

Not bad, but not perfect either

- Who
  - “Mixed” contracts: devices of different teams at the same customer
    - Example: a customer with network equipment, but also security cameras
  - Alerts go to the wrong team from time to time
    - It’s not nice waking up from a pager call about a device you can’t do anything about
    - Figuring out who can actually fix the problem takes extra time… Not good for SLAs
  - The dominant type of device a customer has might change over time
- When
  - All devices generate alarms according to the same regime
    - It’s not possible to monitor some devices for data collection only
- Customer name as a prefix to the hostname
  - Requires discipline to name all devices according to the naming convention
  - Long customer names causes readability to suffer
  - “Creative” abbrevs. for customer names

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Host groups to the rescue!

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- Each device must belong to 3 host group categories
  - TECH-*
  - ALERT-*
  - CUST-*
- Optional host groups that override default behavior
  - AUTOTICKET-*
- Membership of these mandatory host groups can be monitored by Zabbix as well ☺
  - Eliminates unnoticed misconfigurations

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CURRENT SOLUTION

TECH- host groups

- Examples: TECH-Networking, TECH-IT_Support, TECH-Datacenter, …
- Determines who gets alerts
- 1-to-1 mapping with teams within the organisation

CURRENT SOLUTION

ALERT- host groups

- ALERT-24x7, ALERT-8x5, ALERT-NONE
- Determines when alerts are sent out
- ALERT-NONE is useful for:
  - Data collection to help troubleshooting
  - “Fake” hosts in Zabbix

CURRENT SOLUTION

CUST- host groups

- Examples: CUST-Skaro, CUST-Slitheen, …
- Every customer has a host group
  - Nested host groups are used for customers with multiple sites
- Very convenient to schedule maintenance windows for planned outages
- We still follow the convention of prefixing hostnames with customer names

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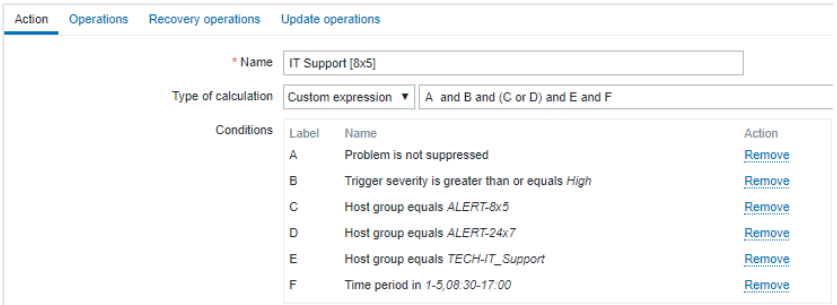
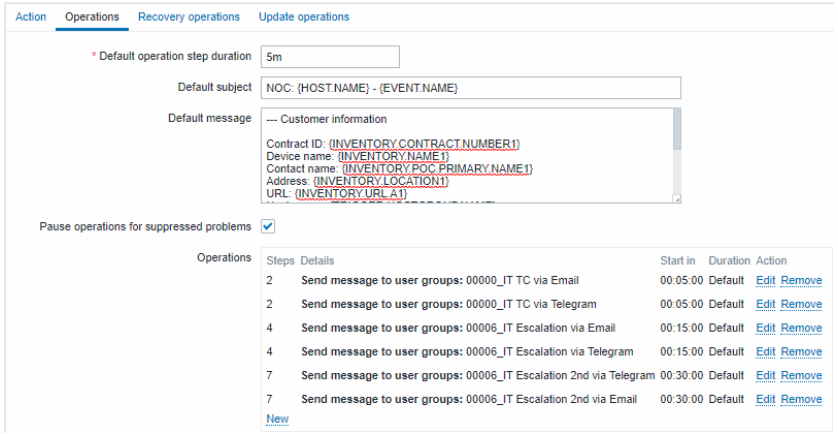
EXAMPLE ALERT ACTION

EXAMPLE

Conditions



Operations



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- SDMs want to see everything about specific customers
  - We can control access based on CUST- groups as well as TECH- groups
- Even more fine-grained control through tags?
  - Not researched yet
- Better monitoring of host configurations
  - Now: straight-on “one TECH-, one ALERT-, one CUST- group per host”
  - Sometimes it makes sense to e.g. have one host belong to multiple TECH- groups

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  - Multiple dimensions are orthogonal
  - Can be set independently from each other
- Setting up initially is a hassle
  - A lot of very repetitive Trigger actions (one for every TECH- and ALERT- combo)
  - Once configured, adding new hosts to the system is easy
- Expanding functionality in the future should not be too difficult

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