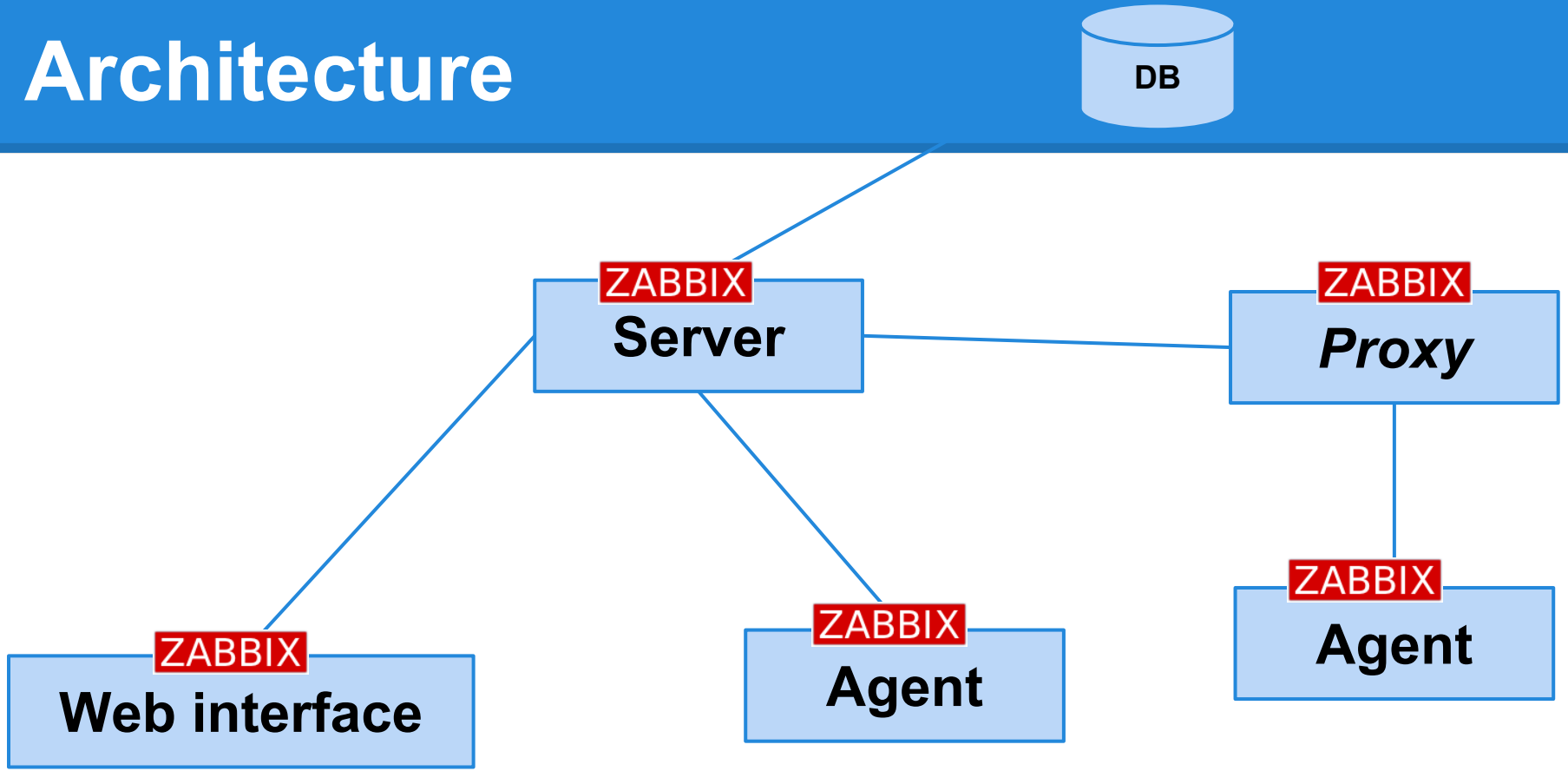
Zabbix

Vincenzo Spinoso (INFN)

Documentation

https://www.zabbix.com/documentation/

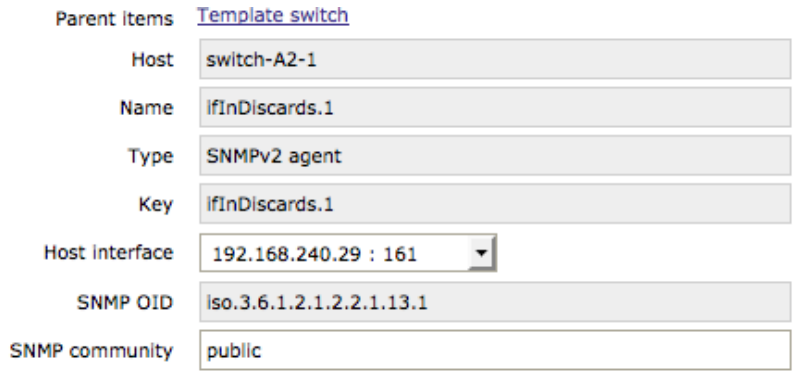
Architecture



- **agents** report availability and integrity information and statistics to the **server**
- the server is the central repository in which all configuration, statistical and operational data are stored
- all configuration information as well as the data gathered by Zabbix is stored in a **database**
- for an easy access to Zabbix from anywhere and from any platform, the **web-based interface** is provided (PHP-based)
    - the interface is part of Zabbix server, and usually (but not necessarily) runs on the same physical machine as the one running the server
    - Zabbix web interface must run on the same physical machine if SQLite is used
- **proxy** can collect data on behalf of Zabbix server
    - optional, but it may be very beneficial to distribute the load of a single Zabbix server

Data gathering

- availability and performance checks
- support for SNMP (both trapping and polling), IPMI, JMX, VMware monitoring
- custom checks
- gathering desired data at custom intervals
- performed by server/proxy and by agents



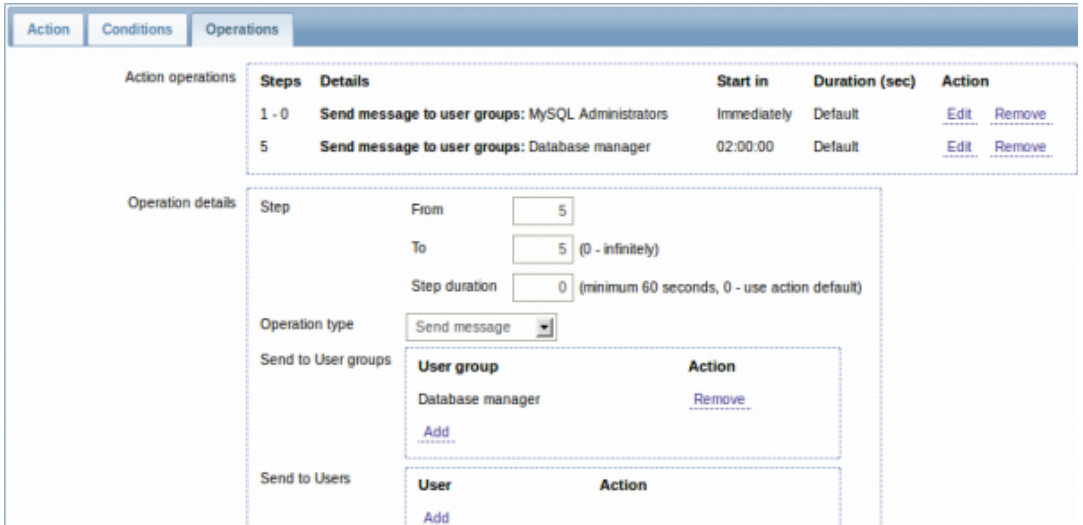
Flexible threshold definitions

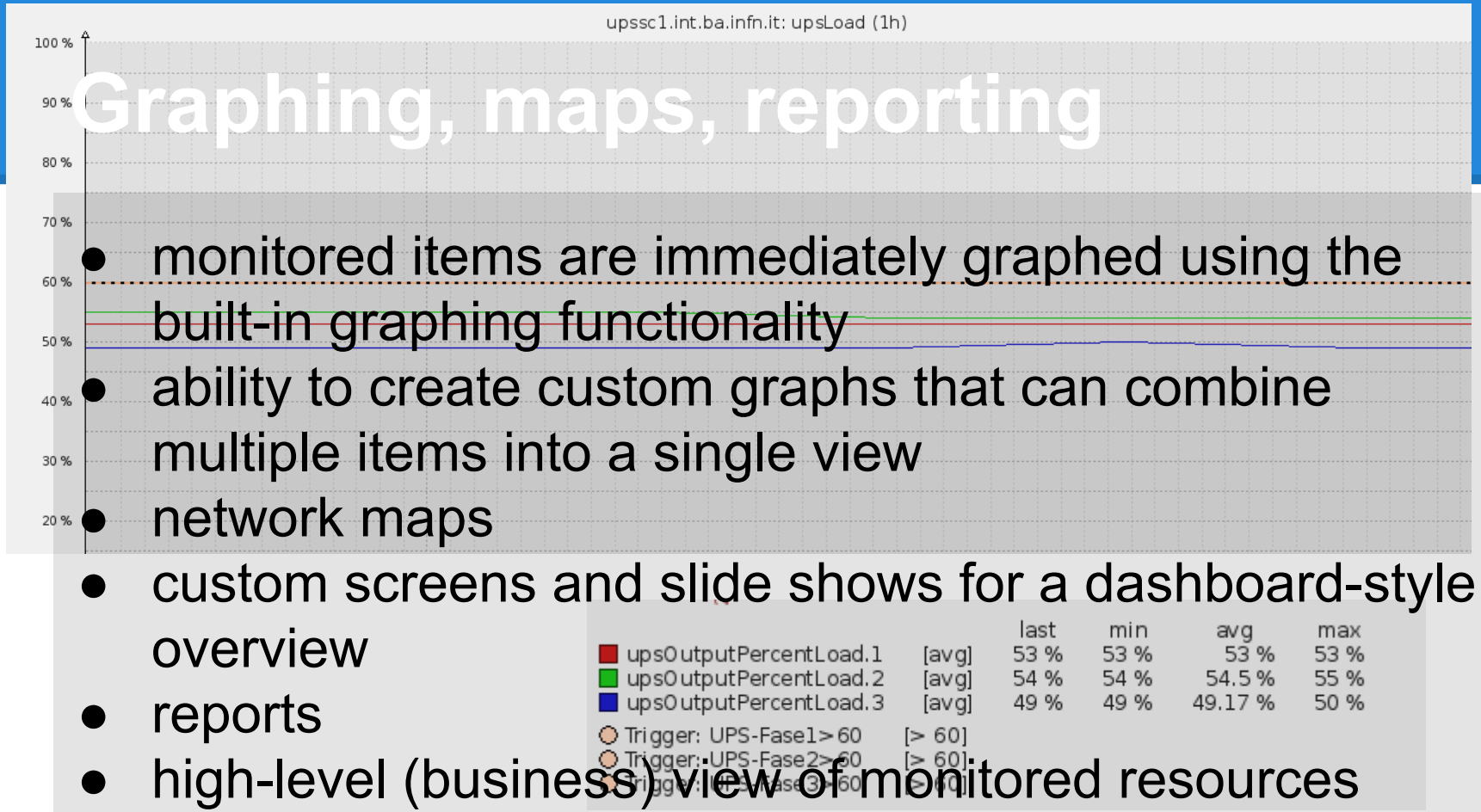
you can define very flexible problem thresholds, called **triggers**, referencing values from the backend database (**items**)

Severity	Name	Expression
Warning	Template WN: Core number on {HOST.NAME} is < 16	{alicegrid33.ba.infn.it:ncores.**last**(0)}<{$NCOR_MIN}
High	Template WN: Crond not running on {HOST.NAME}	{alicegrid33.ba.infn.it:proc.num[crond].**last**(0)}=0
High	Template WN: CVMFS not mounted	{alicegrid33.ba.infn.it:cvmfs.**str**(OK)}=0
High	Template WN: EMI-Release is not correct	{alicegrid33.ba.infn.it:emi.release.**str**({$EMI_REL})}=0
Average	Template WN: Lack of available memory on server {HOST.NAME}	{alicegrid33.ba.infn.it:vm.memory.size[available].**last**(0)}<20M
Warning	Template WN: Lack of free swap space on {HOST.NAME}	{alicegrid33.ba.infn.it:system.swap.size[,free].**last**(0)}<50
Warning	Template WN: Processor load is too high on {HOST.NAME}	{alicegrid33.ba.infn.it:system.cpu.load.**last**(0)}>150
High	Template WN: SSH not running on {HOST.NAME}	{alicegrid33.ba.infn.it:proc.num[sshd].**last**(0)}=0
Information	Template WN: Users logged in {HOST.NAME}	{alicegrid33.ba.infn.it:system.users.num.**last**(0)}>0
Average	Template WN: Zabbix agent on {HOST.NAME} is unreachable for 10 minutes	{alicegrid33.ba.infn.it:agent.ping.**nodata**(10m)}=1

Highly configurable alerting

- sending notifications can be customized for the escalation schedule, recipient, media type
- notifications can be made meaningful and helpful using macro variables
- automatic actions include remote commands





Graphing, maps, reporting

- monitored items are immediately graphed using the built-in graphing functionality
- ability to create custom graphs that can combine multiple items into a single view
- network maps
- custom screens and slide shows for a dashboard-style overview
- reports
- high-level (business) view of monitored resources

Historical data storage

- data stored in a database (MySQL, PostgreSQL, SQLite)
- configurable history
- built-in housekeeping procedure

Easy configuration

- grouping checks in **templates**
- templates can inherit other templates
- add monitored devices as **hosts**
- hosts are picked up for monitoring, once in the database
- apply templates to monitored devices

Network discovery

- automatic discovery of network devices
- agent auto registration
- discovery of file systems, network interfaces and SNMP OIDs

Permissions system

- secure user authentication (Internal, LDAP, HTTP)
- certain users can be limited to certain views

Zabbix API

Zabbix API provides programmable interface to Zabbix i.e. for

- mass manipulations
- 3rd party software integration

JSON-RPC or httplib (Python) can be used!

Data flow

- In order to create an **item** that gathers data you must first create a **host**.
- you must first have an item to create a **trigger**
- you must have a trigger to create an **action**
- thus if you want to receive an alert that your CPU load it too high on Server X you must
  - create a host entry for Server X
  - followed by an item for monitoring its CPU,
  - then a trigger which activates if the CPU is too high,
  - followed by an action which sends you an email

Thank you!