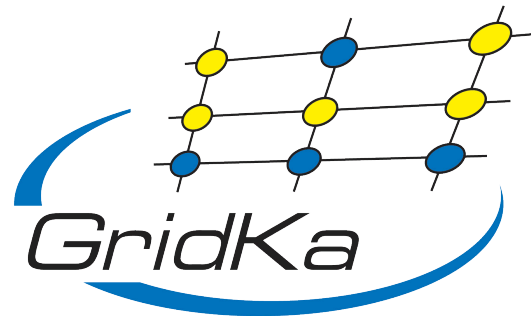


Monitoring at



using



Axel Jäger

Grid Computing Centre Karlsruhe (GridKa)

Forschungszentrum Karlsruhe
Institute for Scientific Computing
Hermann-von-Helmholtz-Platz 1
D-76344 Eggenstein-Leopoldshafen

<http://www.fzk.de>, <http://www.gridka.de>

axel.jaeger@iwr.fzk.de

GridKa is the German WLCG-Tier1-Center

started in 2001

today

- **~2500 CPUs in compute nodes**
- **~ 2 Petabyte online storage**

monitoring tool is required

Why Nagios® ?

Nagios® is „Open Source“

Nagios® is licensed under the terms of the GNU General Public License

Nagios® can do everything we need

What is Nagios ?

Nagios is a system and network monitoring application. It watches hosts and services you specify, alerting you when things go bad and when they get better

Nagios has a lot of features, making it a very powerful monitoring tool.

(citations from <http://www.nagios.org>)

some terms of Nagios

check : a test of any kind of system state like
disk-usage, cpu-load, response-time, ...

host : a computer with an IP-Adresse

service : one check at one host - possible states are :
OK,WARNING,CRITICAL or UNKNOWN

other terms : active / passive check, contact, hostgroup, ...

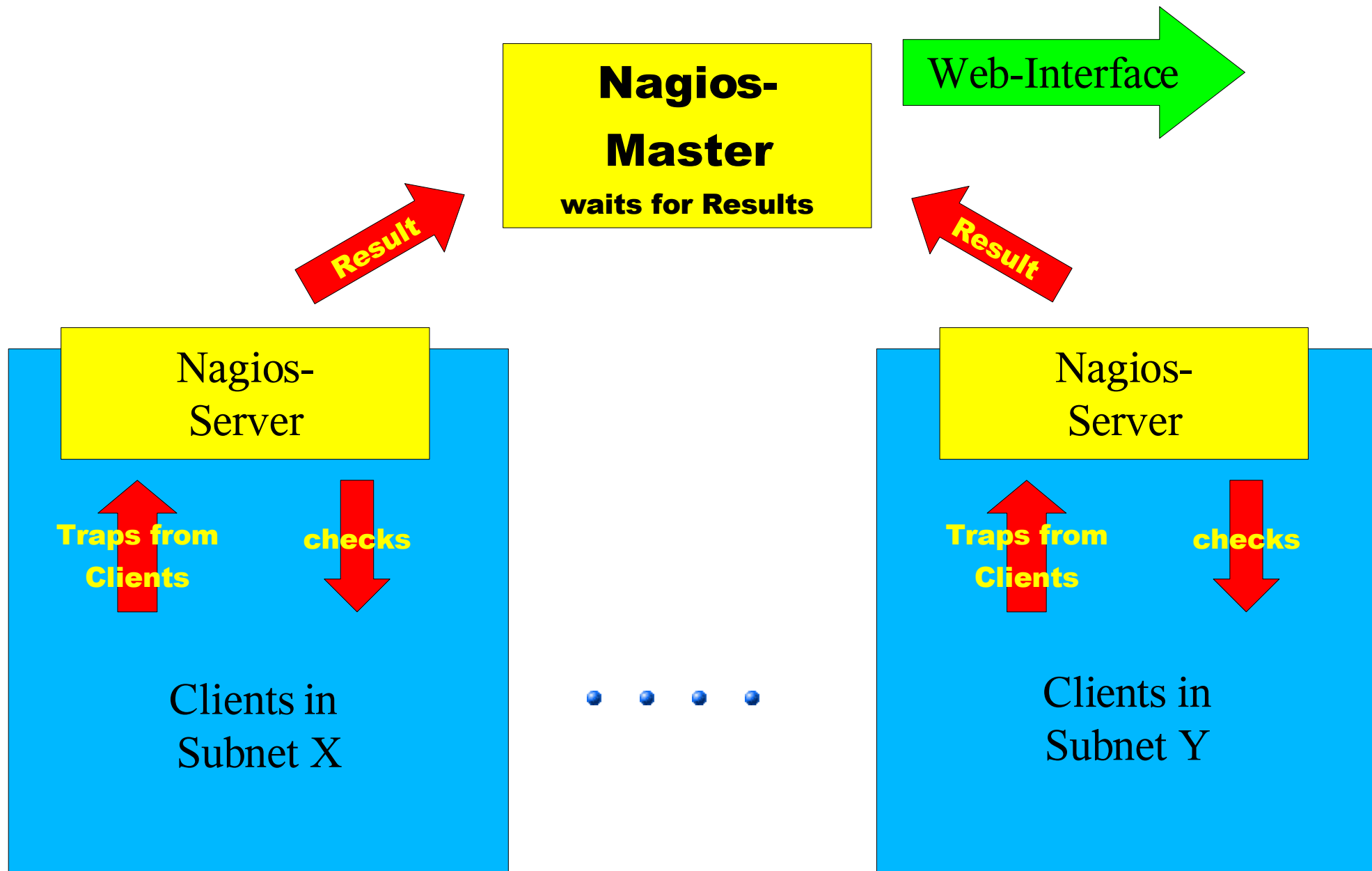
What does GridKa monitor ?

today we monitor 1681 hosts with 13318 services

we use ~60 different checks :

ping, time, disk-usage, response of LDAP-, Apache- or Database-Server, dCache, gridftp, disk-failure, NFS, racktemperature, open rackdoor, ...

every subnet has its own Nagios-Server (Distributed Monitor)



Advantage

- **higher performance of the checks.**
- **can check more often**

Disadvantage

- **complex configuration (today : 46 Nagios-Server)**
- **we have to monitor the monitoring system**

„Rack-Manager“ for a Subnet

- **Nagios-Server**
- **Installation-Server**
- **Ganglia Collector (workload monitoring)**
- **DHCP- Server / Time-Server / NIS-Server / Log-Host**
- **etc.**

eventhandler :

in some cases it would make sense to define an eventhandler.

this eventhandler is a script that attempts to repair the error

notification :

**you define in which cases the master (and only the master)
send an E-Mail or SMS to defined contacts**

example :

- the state of a service switch to „CRITICAL“ - sends a SMS**
- the state switch back to „OK“ (recovery) – sends an e-mail**

example of a check :

Nagios-Server checks if the process „NTPD“ is running on a specific client

if the result is „NO“ the state of this service will set to „CRITICAL“, the state and result is send to nagios master and the defined eventhandler will start.

this eventhandler attempts to restart the process at the specific client.

example of a check :

if the result is „YES“ the state of this service will become „OK“ and the state and result will be send to nagios master

this check runs in GridKa-environment every 15 minutes for several processes like ntpd, pbs_mom, gmond, ...

(specified in snmpd.conf at client host)

at last

observed services should be up to date

other monitoring tools like ganglia could be useful

Live-Demo ?

Comments, Questions?