



Enabling Grids for E-science

NagiosGrapher

Viewing the history of metrics

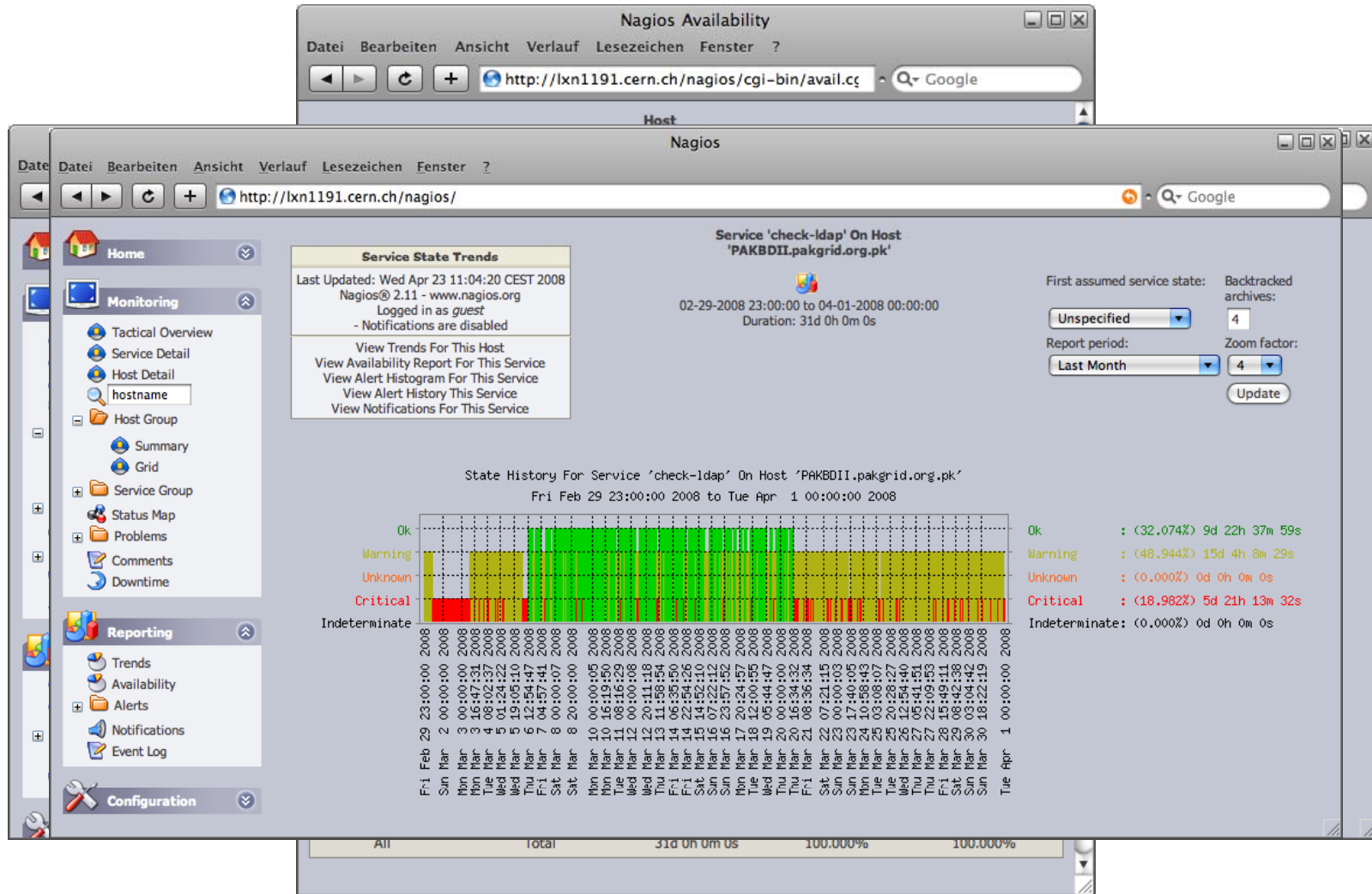
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- **Existing monitoring in Nagios**
- **Introduction to NagiosGrapher**
- **Installation & Configuration**
- **NagiosGrapher Web Interface**
- **Advantages/Disadvantages**

- Nagios Reports



- **Introduction**

- ➔ Nagios extension to monitor service metrics developed by NETWAYS
- ➔ Post-processes Nagios probe output
- ➔ Uses **RoundRobinDatabases** for storing metric values (min,max,avg)
- ➔ Offers web interface to create/watch graphs for chosen service metric values in a specific time periods (current, daily, weekly, monthly, yearly)
- ➔ PERL based scripts
- ➔ RPM's available for SUSE (Ubuntu next)

(Nagios Plugin Output)

```
./check_icmp -H localhost
OK - localhost: rta 0.054ms, lost 0% | rta=0.054ms,200.000;500.000;0; pl=0% 40;80;;
```



- **Installation**

- If you have a RPM file – be lucky!
- Otherwise:
 - Download package from www.nagiosexchange.org / www.sourceforge.net
 - Shipped installation guide: NagiosGrapher/doc/INSTALL
 - configure with autoconf and 'configure'
 - **SLC**: `configure --layout redhat`
 - fix missing packages
 - Install



Iterative process

- **Configuration files are similar to Nagios ones (*.ncfg)**
 - Main configuration file: `/etc/nagios/ngraph.ncfg`
 - Other files usually in `/etc/nagios/ngraph.d/*.*`
 - Main NagiosGrapher executable :
`/usr/lib/nagios/plugins/contrib/collect2.pl`
 - Runs as daemon and post processes output from Nagios either through named pipe or network
 - But also: `/usr/lib/nagios/plugins/contrib/fifo_write.pl`
 - *Wrapper for standard Nagios fifo_write module to enable write timeout*

- **ngraph.ncfg:**
 - change: `perffile_path` directive must be commented

- **nagios.cfg**
 - add: `cfg_dir=/etc/nagios/serviceext`
 - add: `service_perfdata file=/tmp/service-perfdata`
 - change: `process-performance-data=1`
 - change: `service_perfdata_command=process-service-command`

- **commands.cgi:**
 - change: `service-perfdata-command` `command_line` directive

```

..
# 'process-service-perfdata' command definition
define command{
    command_name process-service-perfdata
    command_line /usr/lib/nagios/plugins/contrib/fifo_write.pl
                 /var/log/nagios/rw/ngraph.pipe
                 '$HOSTNAME$\t$SERVICEDESC$\t$SERVICEOUTPUT$\t$SERVICEPERFDATA$\n' 3
}

```

One liner!

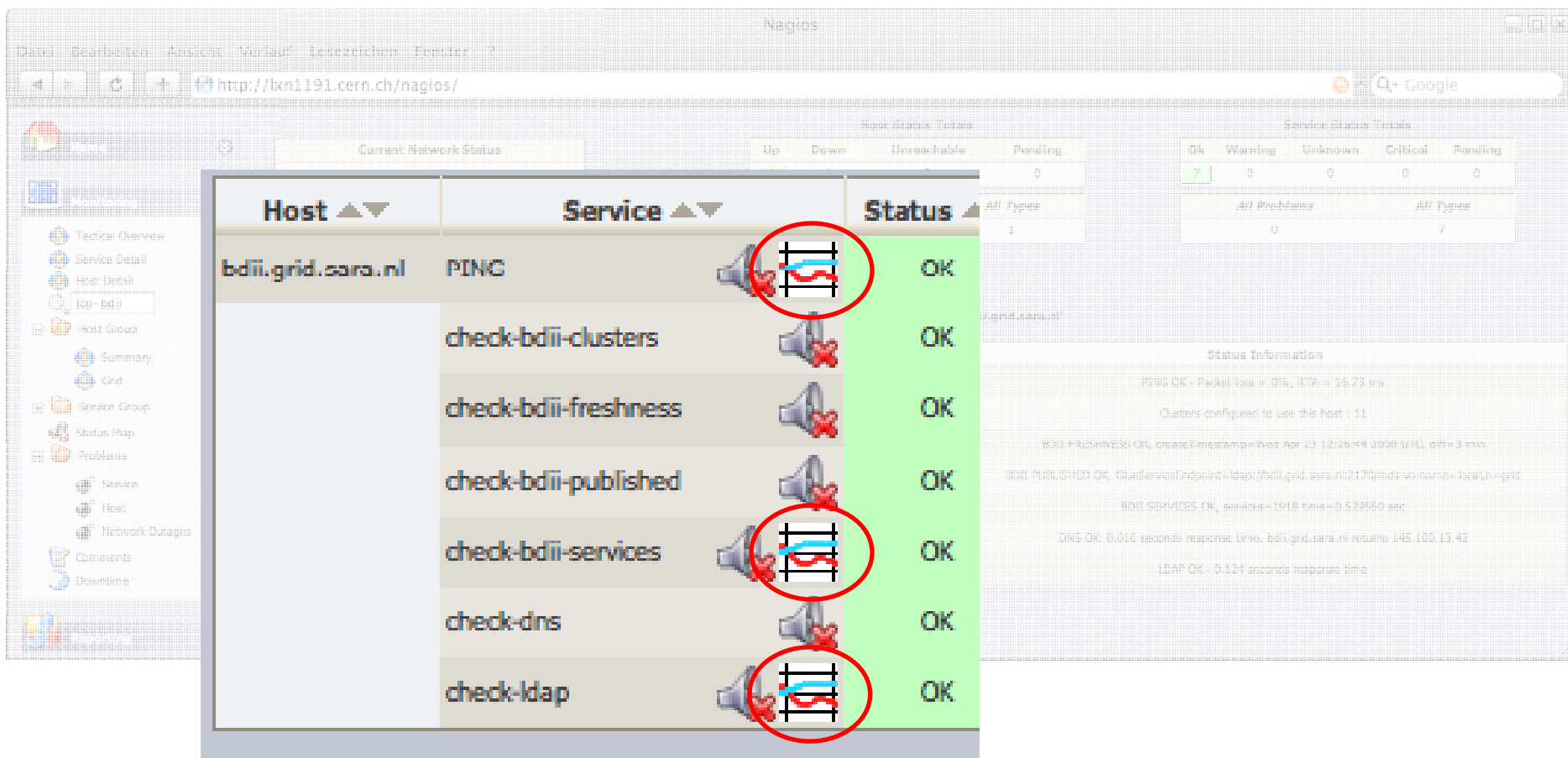
- **Activate NagiosGrapher service check configuration files**
 - NagiosGrapher reads all *.nconf files recursively in `/etc/nagios/ngraph.d/`
 - e.g. `check_ping.nconf_disabled` rename to `check_ping.nconf`
- **Restart Nagios**
- **Start NagiosGrapher**
- **Watch the logfile**
 - `tail -f /var/log/nagios/ngraph.log`
- **Successful?**
 - Reduce loglevel from default (255, heavy trace) to lower level



no log rotation!

Please wait...





The screenshot shows the Nagios web interface with the following data:

Host	Service	Status
bdii.grid.sara.nl	PING	OK
	check-bdii-clusters	OK
	check-bdii-freshness	OK
	check-bdii-published	OK
	check-bdii-services	OK
	check-dns	OK
	check-ldap	OK

Summary statistics from the interface:

- Host Status Totals: Up: 0, Down: 0, Unreachable: 0, Pending: 0
- Service Status Totals: Ok: 7, Warning: 0, Unknown: 0, Critical: 0, Pending: 0

Additional details visible in the interface include a left-hand navigation menu with options like 'Tactical Overview', 'Service Detail', and 'Host Detail', and a right-hand pane showing 'Status Information' for the selected service.

graph analysis for bdii.grid.sara.nl, check-bdii-services

DATEI Bearbeiten Ansicht Verlauf Lesezeichen Fenster ?

http://lxn1191.cern.ch/nagios/cgi-bin/graphs.cgi?service=

NETWAYS Nagios Grapher v1.6.1-rc5 (Logged in as guest)

[1 Current] [2 Daily] [3 Weekly] [4 Monthly] [5 Yearly] [Reload] [Close]

Width: 500 Height: 80 Refresh: 3 minutes

page: **2 Time**

Type: Average values

Start: End:

Only values defined by the AT-STYLE TIME SPECIFICATION

[RRDInfo] [TemplateInfo] Change

[To top] 1 Current graph View as: PDF, SVG, EPS

bdi.grid.sara.nl(check-bdii-services) - 1 Current Graph

Current

seconds

[16:07/2008-04-23]

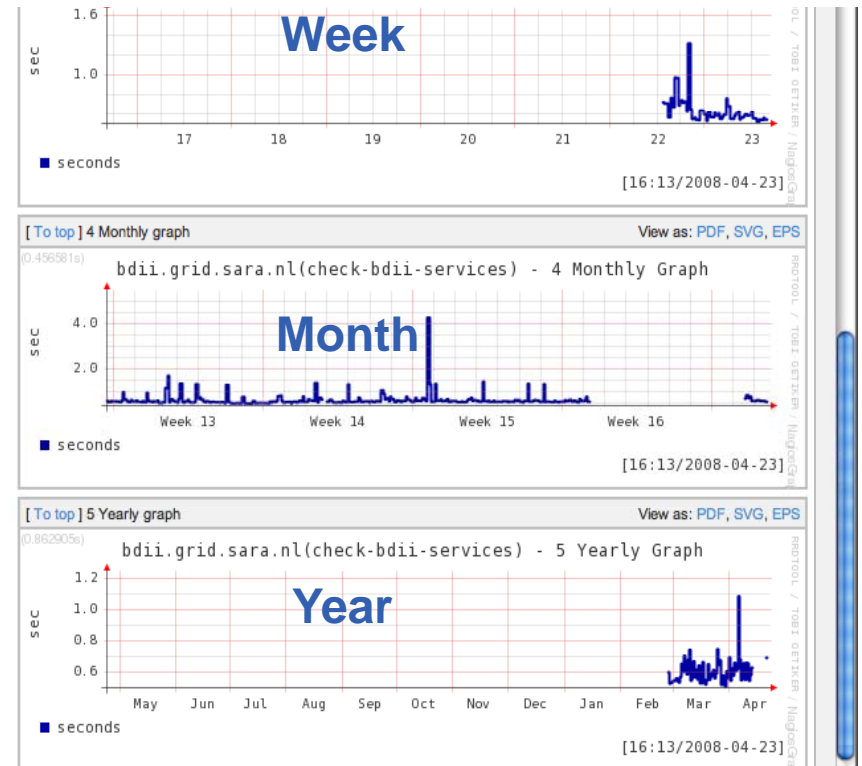
[To top] 2 Daily graph View as: PDF, SVG, EPS

bdi.grid.sara.nl(check-bdii-services) - 2 Daily Graph

Day

seconds

Interface to choose values/time scope



rrd info for bdii.grid.sara.nl, check-bdii-services

Datei Bearbeiten Ansicht Verlauf Lesezeichen Fenster ?

http://lxn1191.cern.ch/nagios/cgi-bin/graphs.c

NETWAYS Nagios Grapher v1.6.1-rc5 (Logged in as guest)

RRDInfo for `bdii.grid.sara.nl, check-bdii-services`:
[Go back](#)

ds[seconds].last_ds:	0.718257
ds[seconds].max:	(empty)
ds[seconds].min:	(empty)
ds[seconds].minimal_heartbeat:	1800
ds[seconds].type:	GAUGE
ds[seconds].unknown_sec:	(empty)
ds[seconds].value:	79.96129648302
ds[services].last_ds:	1931
ds[services].max:	(empty)
ds[services].min:	(empty)
ds[services].minimal_heartbeat:	1800
ds[services].type:	GAUGE
ds[services].unknown_sec:	(empty)
ds[services].value:	214972.16666
filename:	/var/lib/nagios/rrd/bdii.grid.sara.nl/f17620d531cfc3d8f266b28e3826e973.rrd
last_update:	1208962911
rra[0].cdp_prep[0].unknown_datapoints:	(empty)
rra[0].cdp_prep[0].value:	(empty)
rra[0].cdp_prep[1].unknown_datapoints:	(empty)
rra[0].cdp_prep[1].value:	(empty)
rra[0].cf:	AVERAGE
rra[0].pdp_per_row:	1
rra[0].rows:	1010
rra[0].xff:	0.5
rra[10].cdp_prep[0].unknown_datapoints:	(empty)

page: **2 Time**

Type: **Average values**

Start:

End:

Only values defined by the AT-STYLE

[RRDInfo] [TemplateInfo]

templateinfo for check-bdii-services

Datei Bearbeiten Ansicht Verlauf **Lesezeichen** Fenster ?

http://lxn1191.cern.ch/nagios/cgi-

NETWAYS Nagios Grapher v1.6.1-rc5 (Logged in as guest)

Graphtemplate for `check-bdii-services`:
[Go back](#)

```

define ngraph{
    graph_legend          Services
    graph_legend_eol      none
    graph_log_regex       services=(\d+)
    graph_units           services
    graph_value           services
    page                 1 Services
    rrd_color             00a000
    rrd_plottype         LINE2
    service_name         check-bdii-services
}
    
```

Advantages

- 'Easy' to install
- Creates RRDs on the fly
- Creates serviceext info for page integration on the fly
- Easy adaptable to own service checks
- Real time graphing
- Future work
 - Logrotate in next version
 - Graph 'zooming'

Disadvantages

- **Problems at large scale ~7000 services: 20min to update RRD files**
- *Heavy weight operation:* Regular expressions to find values in service performance output
- **Graphs can't show two different scales (two y-axis)**
- **Little bugs**
 - NagiosGrapaher init script doesn't work correctly
 - PERL complains about uninitialized variables

