Critical server monitoring tools for your eCommerce store. Importance of back-ups. Practical experience

Introduction

- Speakers
  - Igor Krasilich
  - Andriy Sadovskiy
- Agenda
  - General info
    - Backups
    - Monitoring
  - Technical stuff
    - Nagios
    - Munin
    - Bacula
  - Conclusion

Note

You can load this presentation from

http://ice.eltrino.com

right now

Backups

- Meaning — save and restore
- Purposes
  - Restore after data loss
  - Rollback to concrete state
- You should create plan first

Backup planing

- Storage, repository and rotation scheme
- Selection and extraction of data
- Dataset manipulation

Backup repository

- Unstructured
- Full only
- Incremental
- Differential
- Reverse delta

Rotation scheme

- First In, First Out
- Grandfather-father-son
- Tower of Hanoi

Backup level \ Session	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	A		A		A		A		A		A		A		A	
2		B				B				B				B		
3				C								C				
4								D								
5																E

- Weighted random approach

Manipulation with data and dataset optimization

- Compression
- Deduplication
- Duplication
- Encryption
- Multiplexing
- Staging

Monitoring

- Find network issues
- When problems occured on server
- Determine corectness of application flow on server

Monitoring

- Network
- CPU monitoring
- RAM monitoring
- Disk space monitoring
- Hardware monitoring

Why?

- Even small businesses have critical data
- It's our resposibility to care about client
- Fast feedback


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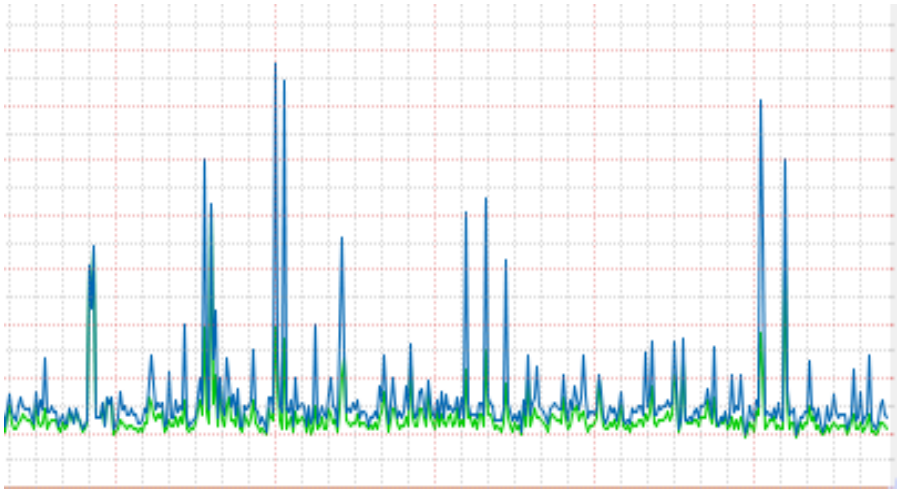
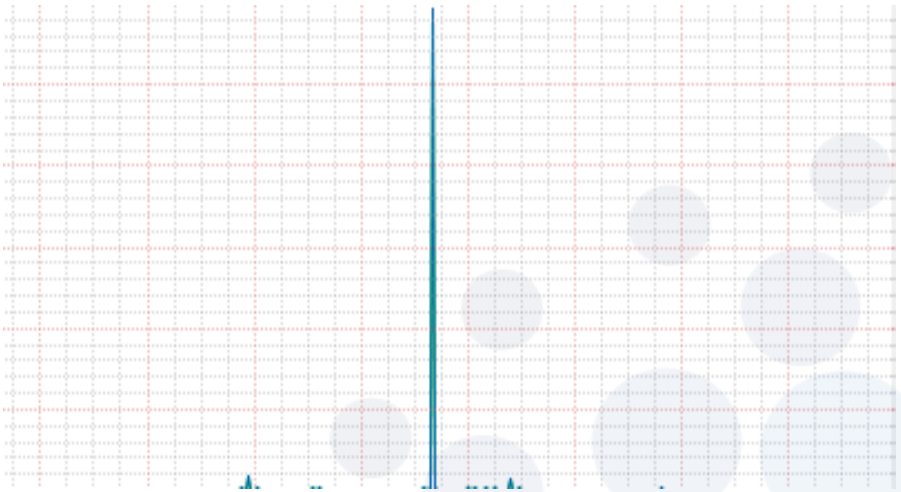
Clients



You



Nagios

Nagios®

General
- Home
- Documentation

Current Status
- Tactical Overview
- Map
- Hosts
- Services
- Host Groups
  - Summary
  - Grid
- Service Groups
  - Summary
  - Grid
- Problems
  - Services (Unhandled)
  - Hosts (Unhandled)
  - Network Outages

Quick Search:

Reports
- Availability
- Trends
- Alerts
  - History
  - Summary
  - Histogram
- Notifications
- Event Log

System
- Comments
- Downtime
- Process Info
- Performance Info
- Scheduling Queue
- Configuration

Current Network Status
Last Updated: Fri Mar 1 00:16:29 EET 2013
Updated every 90 seconds
Nagios® Core™ 3.4.4 - www.nagios.org
Logged in as *nagiosadmin*

View Service Status Detail For All Host Groups
View Host Status Detail For This Host Group
View Status Overview For This Host Group
View Status Summary For This Host Group
View Status Grid For This Host Group

Host Status Totals

Up	Down	Unreachable	Pending
2	1	0	0

All Problems	All Types
1	3

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
18	1	0	5	0

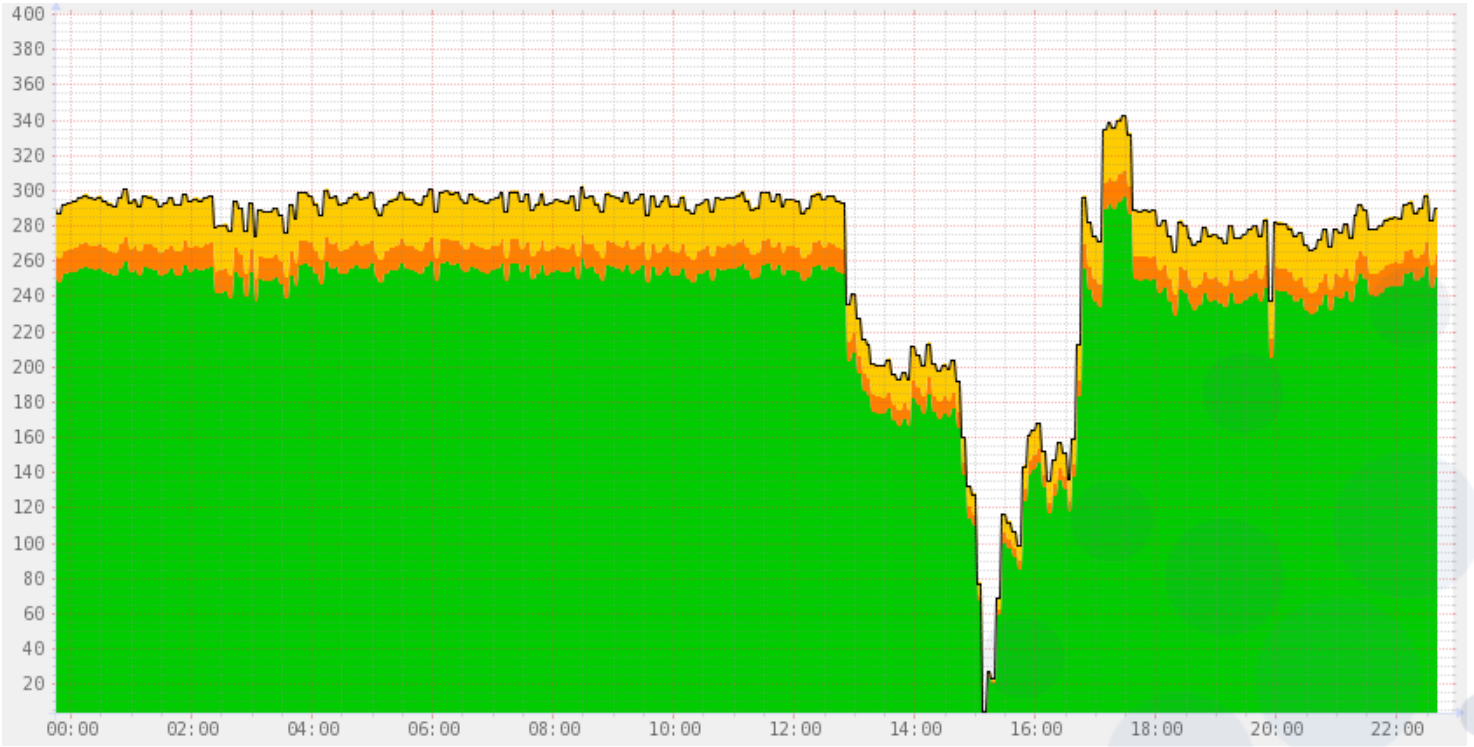
All Problems	All Types
6	24

Service Status Details For Host Group 'linux-servers1'

Limit Results: 100

Host	Service	Status	Last Check	Duration	Attempt	Status Information
web1	Current Load	OK	03-01-2013 00:13:15	0d 13h 3m 56s	1/4	OK - load average: 0.00, 0.02, 0.00
	Current Users	OK	03-01-2013 00:13:11	0d 13h 3m 18s	1/4	USERS OK - 0 users currently logged in
	HTTP	CRITICAL	03-01-2013 00:15:48	0d 0h 18m 41s	4/4	Connection refused
	PING	OK	03-01-2013 00:15:10	0d 13h 2m 3s	1/4	PING OK - Packet loss = 0%, RTA = 0.50 ms
	Root Partition	OK	03-01-2013 00:13:03	0d 12h 53m 26s	1/4	DISK OK - free space: / 4101 MB (76% inode=87%): /dev/shm 1940 MB (100% inode=99%): /boot 407 MB (88% inode=99%):
	SSH	OK	03-01-2013 00:15:41	0d 13h 0m 48s	1/4	SSH OK - OpenSSH_5.3 (protocol 2.0)
	Swap Usage	OK	03-01-2013 00:13:53	0d 12h 4m 31s	1/4	USERS OK - 0 users currently logged in
	Total Processes	OK	03-01-2013 00:13:13	0d 12h 59m 33s	1/4	PROCS OK: 65 processes
web2	Current Load	OK	03-01-2013 00:13:38	0d 0h 7m 51s	1/4	OK - load average: 0.01, 0.04, 0.00
	Current Users	OK	03-01-2013 00:13:15	0d 0h 8m 14s	1/4	USERS OK - 0 users currently logged in
	HTTP	WARNING	03-01-2013 00:15:53	0d 0h 3m 36s	4/4	HTTP WARNING: HTTP/1.1 403 Forbidden - 5237 bytes in 0.002 second response time
	PING	OK	03-01-2013 00:15:57	0d 7h 52m 59s	1/4	PING OK - Packet loss = 0%, RTA = 0.47 ms
	Root Partition	OK	03-01-2013 00:14:08	0d 7h 52m 21s	1/4	DISK OK - free space: / 4103 MB (76% inode=87%): /dev/shm 1940 MB (100% inode=99%): /boot 407 MB (88% inode=99%):
	SSH	OK	03-01-2013 00:14:45	0d 7h 51m 44s	1/4	SSH OK - OpenSSH_5.3 (protocol 2.0)
	Swap Usage	OK	03-01-2013 00:15:23	0d 7h 51m 6s	1/4	USERS OK - 0 users currently logged in
	Total Processes	OK	03-01-2013 00:13:06	0d 0h 8m 23s	1/4	PROCS OK: 74 processes
web3	Current Load	OK	03-01-2013 00:11:44	0d 7h 54m 45s	1/4	OK - load average: 0.00, 0.00, 0.00
	Current Users	OK	03-01-2013 00:12:21	0d 7h 54m 8s	1/4	USERS OK - 1 users currently logged in
	HTTP	OK	03-01-2013 00:12:59	0d 7h 53m 30s	1/4	HTTP OK: HTTP/1.1 302 Found - 228 bytes in 0.061 second response time
	PING	OK	03-01-2013 00:11:35	0d 7h 52m 53s	1/4	PING OK - Packet loss = 0%, RTA = 0.47 ms
	Root Partition	CRITICAL	03-01-2013 00:15:14	0d 0h 1m 15s	2/4	Connection refused or timed out
	SSH	CRITICAL	03-01-2013 00:14:51	0d 0h 1m 38s	1/4	No route to host
	Swap Usage	CRITICAL	03-01-2013 00:15:29	0d 0h 1m 0s	1/4	Connection refused or timed out
	Total Processes	CRITICAL	03-01-2013 00:16:13	0d 0h 0m 16s	1/4	Connection refused or timed out

Results 1 - 24 of 24 Matching Services


400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
00:00
02:00
04:00
06:00
08:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00

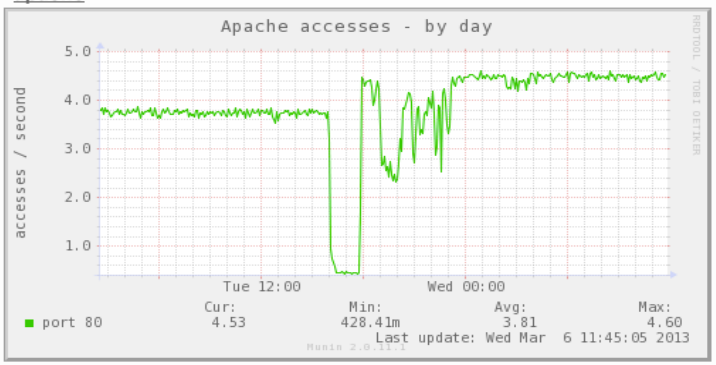

MUNIN

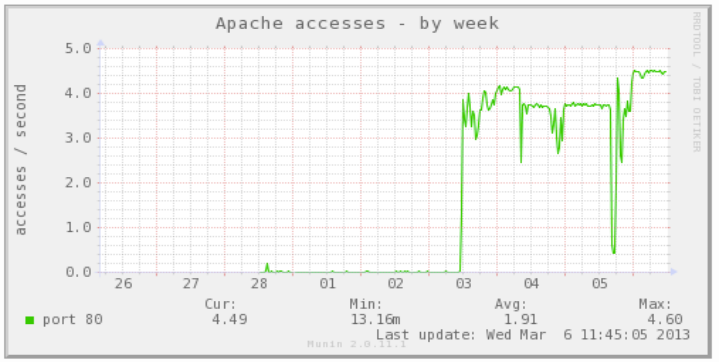
Problems
Critical (0)
Warning (0)
Unknown (0)

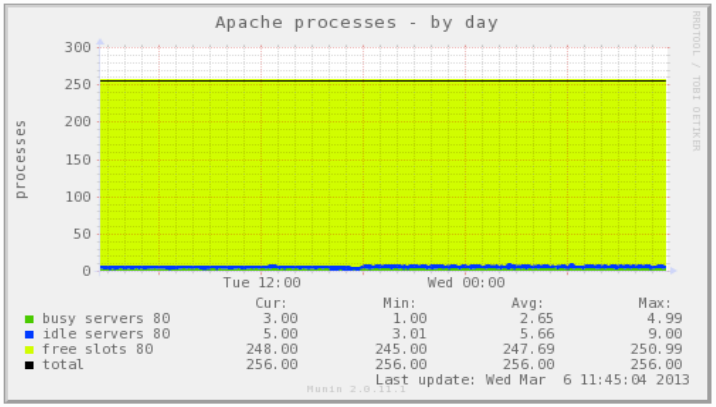
Groups
db1
db2
monitor1
monitor2
web1
web2
web3

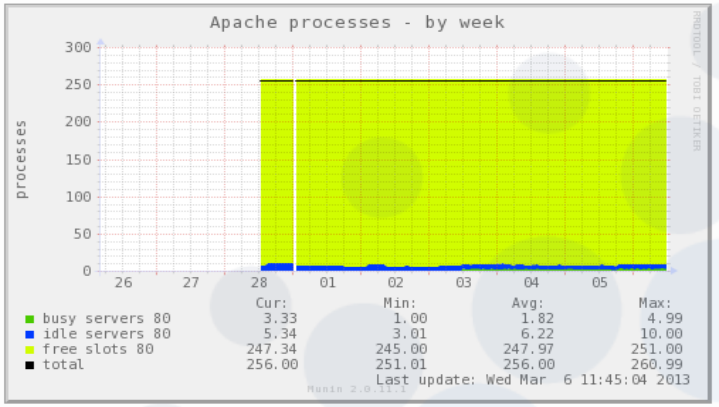
Categories
apache [d w m y]
disk [d w m y]
mysql [d w m y]
network [d w m y]
postfix [d w m y]
processes [d w m y]
system [d w m y]

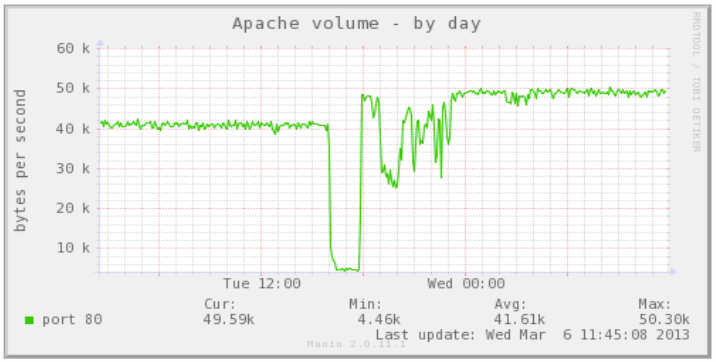
apache

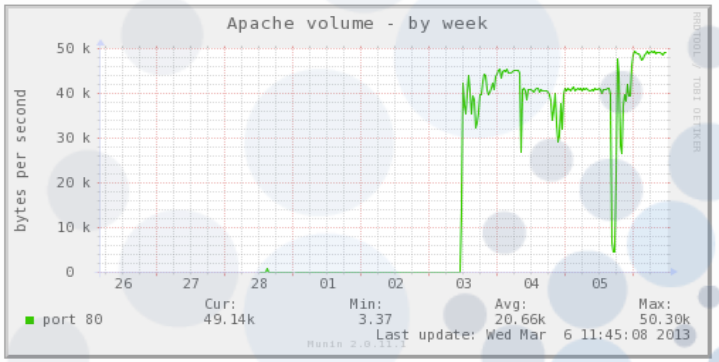






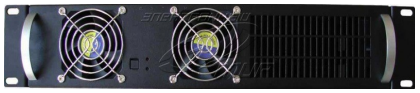







Bacula
Systems™

Nagios



```
# SAMPLE OBJECT CONFIG FILE FOR MONITORING THIS MACHINE

# Define a host for the local machine
define host{
      use                     linux-server1
      host_name               web1


# Define a service to check HTTP on the local machine.
define service{
      use                     local-service1
      host_name               web1
      service_description     HTTP
      check_command           check_http!80
```

MUNIN

```
# Example configuration file for Munin,
# generated by 'make build'

# a simple host tree
    [monitor1]
    address 127.0.0.1
    use_node_name yes
```

```
# Example config-file for munin-node

log_level 4
log_file /var/log/munin-node/munin-node.log
pid_file /var/run/munin/munin-node.pid

background 1
setsid 1

user root
group root

ignore_file [\#~]$
ignore_file DEADJOE$
ignore_file \.bak$
ignore_file %$
ignore_file \.dpkg-(tmp|new|old|dist)$
ignore_file \.rpm(save|new)$
ignore_file \.pod$

Allow ^127\.0\.0\.1$

port 4949
```

```
# Default  Bacula File Daemon Configuration file

Director {
  Name = bacula-dir
  Password = "**********"
}

Director {
  Name = bacula-mon
  Password = "**********"
  Monitor = yes
}

FileDaemon {
  Name = bacula-fd
  FDport = 9102
  WorkingDirectory = /var/spool/bacula
  Pid Directory = /var/run
  Maximum Concurrent Jobs = 20
}

Messages {
  Name = Standard
  director = bacula-dir = all, !skipped, !restored
}
```

```
# Default Bacula Configuration file

Client {
  Name = bacula-fd
  Address = 127.0.0.1
  FDPort = 9102
  Catalog = MyCatalog
  Password = "***********"
  File Retention = 30 days
  Job Retention = 6 months
  AutoPrune = yes
}

JobDefs {
  Name = "DefaultJob"
  Type = Backup
  Level = Incremental
  Client = bacula-fd
  FileSet = "Full Set"
  Schedule = "WeeklyCycle"
  Storage = FileStorage1
  Messages = Standard
  Pool = Default
  Priority = 10
  Write Bootstrap = "/var/spool/bacula/%c.bsr"
}

Job {
  Name = "BackupCatalog"
  JobDefs = "DefaultJob"
  Level = Full
  FileSet="Catalog"
  Schedule = "WeeklyCycle"
  RunBeforeJob =
"/usr/libexec/bacula/make_catalog_backup.pl
MyCatalog"
  RunAfterJob  =
"/usr/libexec/bacula/delete_catalog_backup"
  Write Bootstrap = "/var/spool/bacula/%n.bsr"
  Priority = 11                   # run after
main backup
}

FileSet {
  Name = "Catalog"
  Include {
    Options {
      signature = MD5
    }
     File = /usr/sbin
  }

  Exclude {
    File = /var/spool/bacula
    File = /tmp
    File = /proc
    File = /tmp
    File = /.journal
    File = /.fsck
  }
}
```


```
# SAMPLE OBJECT CONFIG FILE FOR MONITORING THIS MACHINE

define host{
        use                             linux-server2

        host_name                       db1
        alias                           db1
        address                         192.168.122.85
        }

define service{
        use                             local-service2
        host_name                       db1
        service_description             MySQL
        check_command                   check_nrpe!check_mysql
        }
```

```
# Sample NRPE Config File

log_facility=daemon
pid_file=/var/run/nrpe/nrpe.pid
server_port=5666
nrpe_user=nrpe
nrpe_group=nrpe

allowed_hosts=192.168.122.1

dont_blame_nrpe=0
Debug=0
command_timeout=60
connection_timeout=300

include_dir=/etc/nrpe.d/


command[check_mysql]=/usr/lib64/nagios/plugins/check_mysql
```

MUNIN


```
# Example configuration file for Munin,
# generated by 'make build'

# a simple host tree
    [db1]
    address 192.168.122.85
    use_node_name yes
```

```
# Example config-file for munin-node

log_level 4
log_file /var/log/munin-node/munin-node.log
pid_file /var/run/munin/munin-node.pid

background 1
setsid 1

user root
group root

ignore_file [\#~]$
ignore_file DEADJOE$
ignore_file \.bak$
ignore_file %$
ignore_file \.dpkg-(tmp|new|old|dist)$
ignore_file \.rpm(save|new)$
ignore_file \.pod$

allow ^192\.168\.122\.1$

port 4949
```


```
# Default Bacula Configuration file
Client {
  Name = db1
  Address = 192.168.122.85
  FDPort = 9102
  Catalog = MyCatalog
  Password = "**********"
  File Retention = 30 days
  Job Retention = 6 months
  AutoPrune = yes
}

Job {
  Name = "db1-job"
  Type = Backup
  Level = Full
  Client = bacula-fd
  FileSet = "db1_full"
  Schedule = "WeeklyCycle"
  Storage = FileStorage1
  Messages = Standard
  Pool = db1
  Priority = 10
}

FileSet {
  Name = "db1_full"
  Include {
    Options {
      signature = MD5
      compression=GZIP1
    }
    File = "/etc/"
  }
}
```

```
# Default  Bacula File Daemon Configuration file

Director {
  Name = bacula-dir
  Password = "**********"
}

Director {
  Name = bacula-mon
  Password = "**********"
  Monitor = yes
}

FileDaemon {
  Name = bacula-fd
  FDport = 9102
  WorkingDirectory = /var/spool/bacula
  Pid Directory = /var/run
  Maximum Concurrent Jobs = 20
}

Messages {
  Name = Standard
  director = bacula-dir = all, !skipped, !restored
}
```

Nagios

```
define service{
        use                     local-service1
        host_name               web1
        service_description     HTTP
        check_command           check_http!80
```

```
define service{
        use                     local-service2
        host_name               db1
        service_description     MySQL
        check_command           check_nrpe!check_mysql
        }
```

web1

db1

```
# Sample NRPE Config File

log_facility=daemon
pid_file=/var/run/nrpe/nrpe.pid
server_port=5666
nrpe_user=nrpe
nrpe_group=nrpe

allowed_hosts=192.168.122.1

dont_blame_nrpe=0
Debug=0
command_timeout=60
connection_timeout=300

include_dir=/etc/nrpe.d/


command[check_mysql]=/usr/lib64/nagios/plugins/check_mysql
```

MUNIN

```
[web1]
    address 192.168.122.75
    use_node_name yes
```

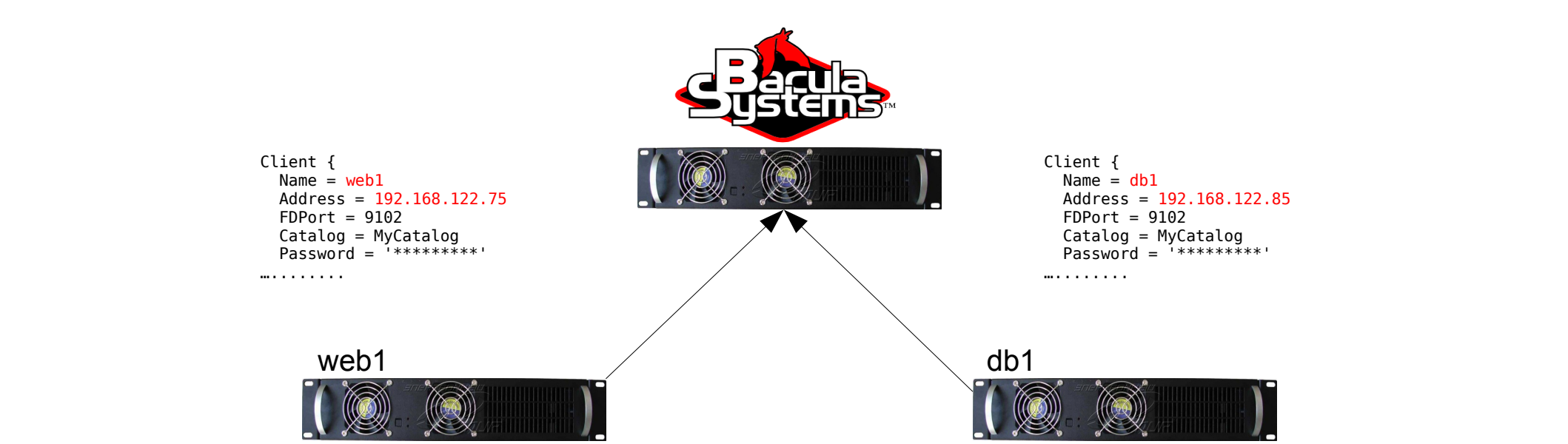
```
[db1]
    address 192.168.122.85
    use_node_name yes
```

web1

db1

```
# Example config-file for munin-node

log_level 4
log_file /var/log/munin-node/munin-node.log
pid_file /var/run/munin/munin-node.pid

background 1
setsid 1

user root
group root

ignore_file [\#~]$
ignore_file DEADJOE$
ignore_file \.bak$
ignore_file %$
ignore_file \.dpkg-(tmp|new|old|dist)$
ignore_file \.rpm(save|new)$
ignore_file \.pod$

allow ^192\.168\.122\.1$

port 4949
```

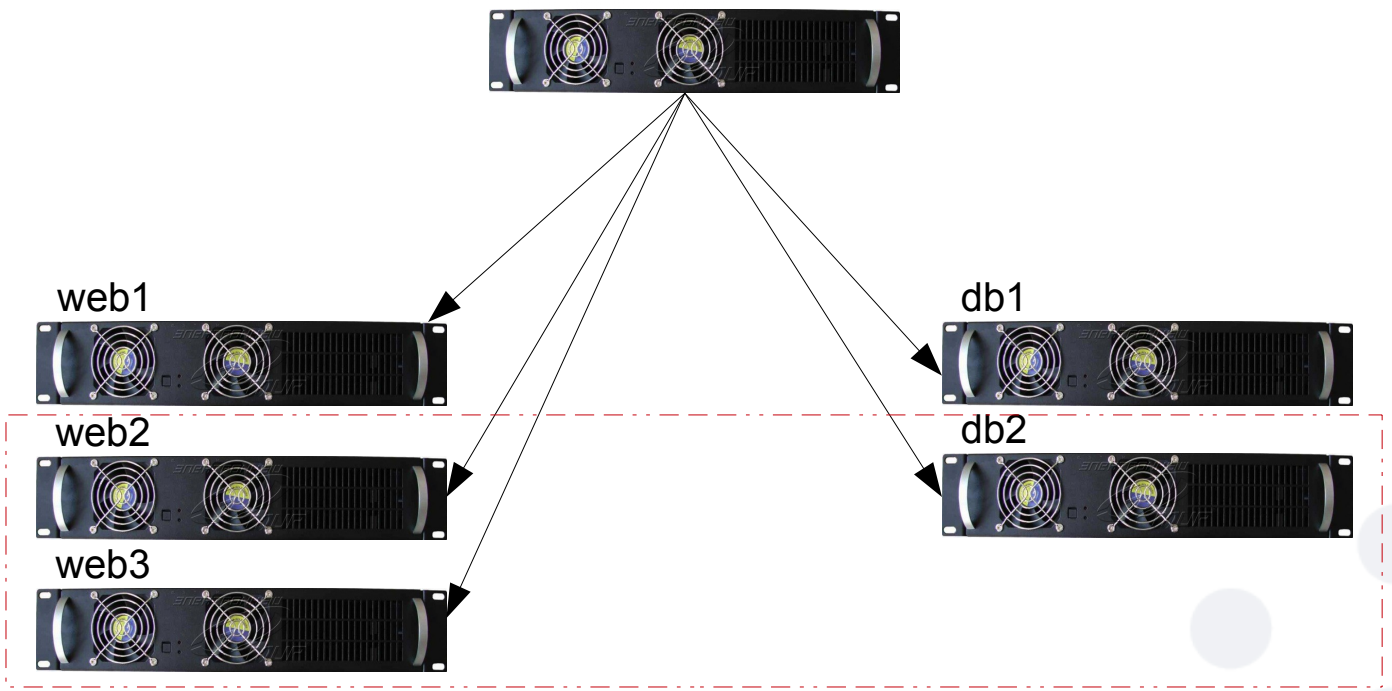
```
# Example config-file for munin-node

log_level 4
log_file /var/log/munin-node/munin-node.log
pid_file /var/run/munin/munin-node.pid

background 1
setsid 1

user root
group root

ignore_file [\#~]$
ignore_file DEADJOE$
ignore_file \.bak$
ignore_file %$
ignore_file \.dpkg-(tmp|new|old|dist)$
ignore_file \.rpm(save|new)$
ignore_file \.pod$

allow ^192\.168\.122\.1$

port 4949
```




```
# Default  Bacula File Daemon Configuration file

Director {
  Name = bacula-dir
  Password = "**********"
}

Director {
  Name = bacula-mon
  Password = "**********"
  Monitor = yes
}

FileDaemon {
  Name = bacula-fd
  FDport = 9102
  WorkingDirectory = /var/spool/bacula
  Pid Directory = /var/run
  Maximum Concurrent Jobs = 20
}

Messages {
  Name = Standard
  director = bacula-dir = all, !skipped, !restored
}
```

```
# Default  Bacula File Daemon Configuration file

Director {
  Name = bacula-dir
  Password = "**********"
}

Director {
  Name = bacula-mon
  Password = "**********"
  Monitor = yes
}

FileDaemon {
  Name = bacula-fd
  FDport = 9102
  WorkingDirectory = /var/spool/bacula
  Pid Directory = /var/run
  Maximum Concurrent Jobs = 20
}

Messages {
  Name = Standard
  director = bacula-dir = all, !skipped, !restored
}
```

Nagios



```
#!/bin/sh

URL="$1"
HEAD="`/usr/bin/curl -Ik $URL 2>&1 | awk NR==1'{print}'`"
PARAM="`echo $HEAD | awk '{print $2}'`"

######### ------ WARNING ------ ##########
for i in 400 401 404 405 408 410 441 413 414 415 403 404 ; do
    if [ "`echo $PARAM`" = "$i" ] ; then
        echo $HEAD
        exit 1
    fi
done

######### ------ CRITICAL ------ ########
for i in 500 501 502 503 506 ; do
    if [ "`echo $PARAM`" = "$i" ] ; then
        echo $HEAD
        exit 2
    fi
done

URLINFO="`/usr/bin/wget --no-check-certificate -O /dev/stdout $URL`"
BUILT="`echo $URLINFO | grep -E 'Built On: [0-9][0-9][0-9][0-9]/[0-9][0-9]/[0-9][0-9]-[0-9][0-9].[0-9][0-9].[0-9][0-9]'`"
if [ "$BUILT" = "" ] ; then
    echo "Problems with Built On: "
    exit 2
fi

######### ------ OK ------ #############
if [ "`echo $PARAM`" = "200" ] ; then
    echo $HEAD
    exit 0
fi

######### ------ UNKNOWN ------ ########
echo 'Critical: Reached unexpected condition'
exit 3
```

```
#!/bin/bash

if [ "$1" = "config" ]; then
    /bin/echo "graph_title eltrino.com load time"
    /bin/echo "graph_args --base 1000 -l 0"
    /bin/echo "graph_vlabel time"
    /bin/echo "graph_scale no"
    /bin/echo "graph_category Timer"
    /bin/echo "Time.label Time"
    /bin/echo "Time.critical 0.15"
    /bin/echo "Time.warning 0.10"
    exit 0
fi

TIME="`curl -s -w %{time_connect}:%{time_starttransfer}:%{time_total} -o /dev/null http://eltrino.com | gawk -F: '{ print $3}'`"
/bin/echo Time.value $TIME
```

```
# Default Bacula Configuration file
Client {
  Name = db1
  Address = 192.168.122.85
  FDPort = 9102
  Catalog = MyCatalog
  Password = "**********"
  File Retention = 30 days
  Job Retention = 6 months
  AutoPrune = yes
}

Job {
  Name = "db1-job"
  Type = Backup
  Level = Full
  Client = bacula-fd
  FileSet = "db1_full"
  Schedule = "WeeklyCycle"
  ClientRunBeforeJob = "/usr/bin/mysqldump -uroot magento > /dumps/magento.sql"
  Storage = FileStorage1
  Messages = Standard
  Pool = db1
  Priority = 10
}

FileSet {
  Name = "db1_full"
  Include {
    Options {
      signature = MD5
      compression=GZIP1
    }
    File = "/etc/"
    File = "/dumps/"
  }
}
```


MUNIN


Bacula
Systems


Nagios

eltrino

Email: info@eltrino.com
Tel: +37257612121
Url: http://eltrino.com