



UiO : **University of Oslo**

ZABBIX @ UiO

Rafael Martinez Guerrero
Center for Information Technology Services
University of Oslo

Zabbix conference 2016
9-10 Sep. Riga, Latvia



~ 3.000



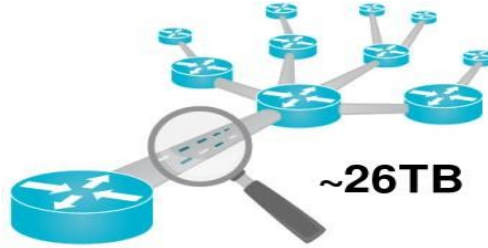
~16.000



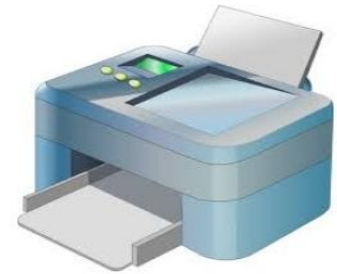
~ 13.000TB



~2.200



~26TB



~1.000 / 38.000.000



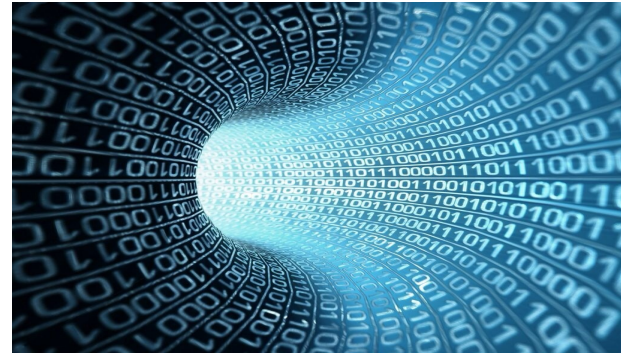
~6.000



~ 30.000



~1.600



Nagios

General

- Home
- Documentation

Monitoring

- Tactical Overview
- Service Detail
- Host Detail
- Hostgroup Overview
- Hostgroup Summary
- Hostgroup Grid
- Servicegroup Overview
- Servicegroup Summary
- Servicegroup Grid
- Status Map
- 3-D Status Map

- Service Problems
 - Unhandled
- Host Problems
 - Unhandled
- Network Outages

Show Host:

- Comments
- Downtime

- Process Info
- Performance Info
- Scheduling Queue

Reporting

- Trends
- Availability
- Alert Histogram
- Alert History
- Alert Summary
- Notifications
- Event Log

Configuration

- View Config

Current Network Status

Last Updated: Tue Aug 11 10:04:02 PDT 2009
 Updated every 90 seconds
 Nagios@3.0b5 - www.nagios.org
 Logged in as [nagiosadmin](#)

- [View History For all hosts](#)
- [View Notifications For All Hosts](#)
- [View Host Status Detail For All Hosts](#)

Host Status Totals

Up	Down	Unreachable	Pending
3	1	0	0
All Problems		All Types	
1		4	

Service Status Totals

OK	Warning	Unknown	Critical	Pending
7	2	4	8	0
All Problems		All Types		
14		21		

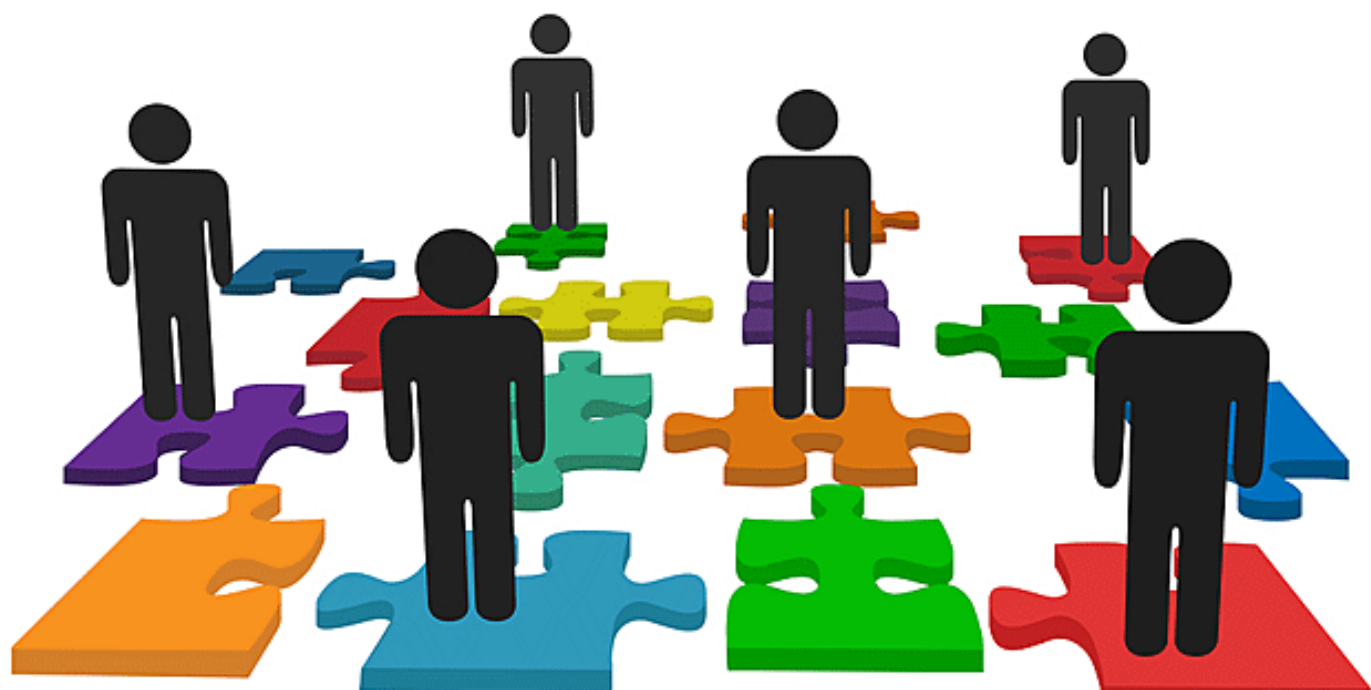
Service Status Details For All Hosts

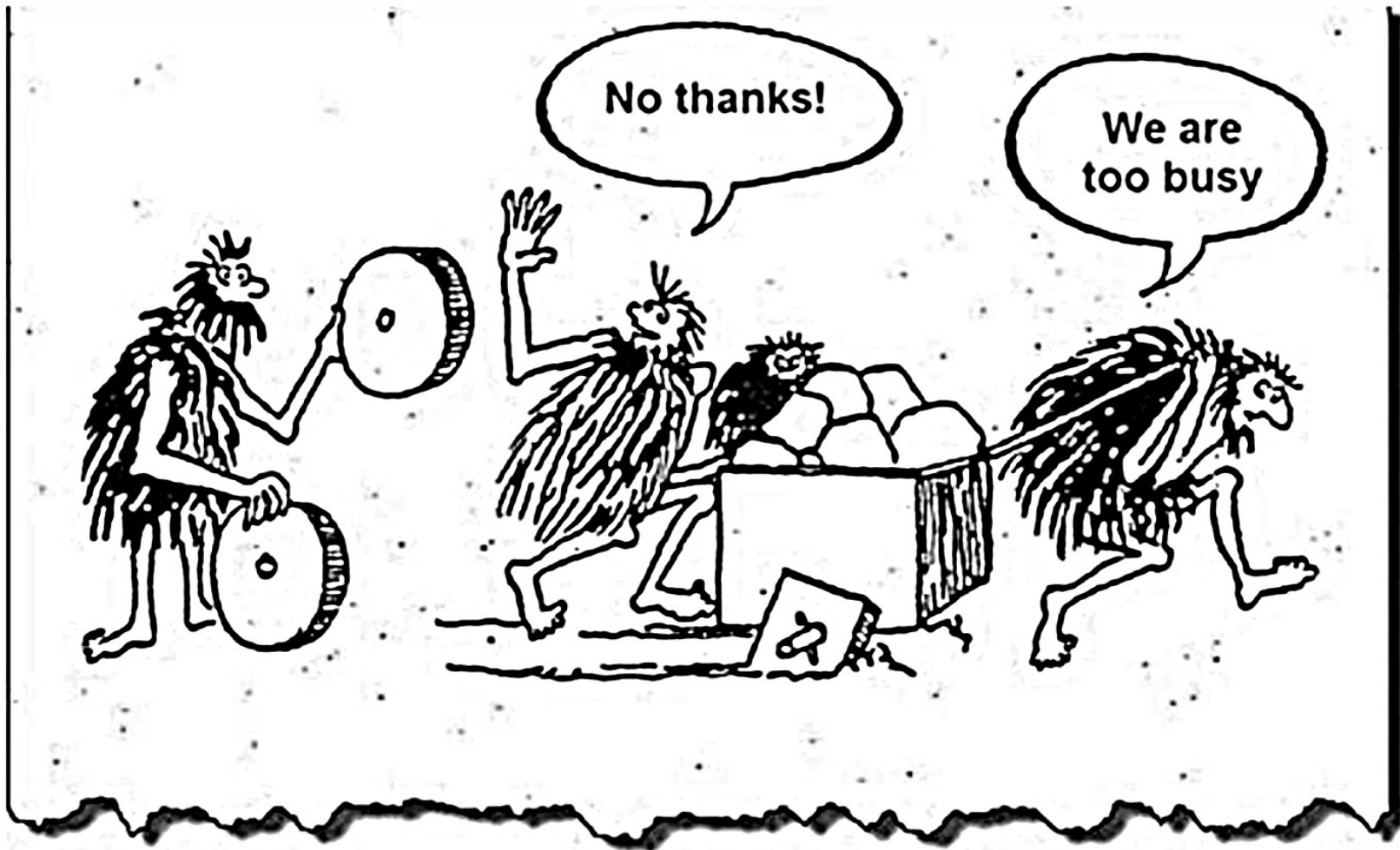
Entries sorted by **service status** (descending)

Host	Service	Status	Last Check	Duration	Attempt	Status Information
disco2690	PING	CRITICAL	08-11-2009 10:00:32	657d 16h 59m 56s	1/3	CRITICAL - Host Unreachable (10.2.0.2)
kparikh-t60	C:\ Drive Space	CRITICAL	08-11-2009 09:59:10	586d 21h 15m 4s	3/3	Connection refused
	CPU Load	CRITICAL	08-11-2009 09:57:54	586d 17h 4m 7s	3/3	Connection refused
	Explorer	CRITICAL	08-11-2009 09:59:17	586d 17h 3m 6s	3/3	Connection refused
	Memory Usage	CRITICAL	08-11-2009 09:59:10	586d 17h 2m 7s	3/3	Connection refused
	NSClient++ Version	CRITICAL	08-11-2009 09:59:16	586d 17h 3m 7s	3/3	Connection refused
	Uptime	CRITICAL	08-11-2009 09:59:11	586d 17h 2m 7s	3/3	Connection refused
	WSSVC	CRITICAL	08-11-2009 09:59:12	586d 17h 7m 4s	3/3	Connection refused
disco2690	Port 1 Link Status	UNKNOWN	08-11-2009 10:00:50	657d 16h 58m 41s	1/3	SNMP problem - No data received from host
	Uptime	UNKNOWN	08-11-2009 10:02:54	657d 16h 57m 26s	1/3	SNMP problem - No data received from host
netgearAtColo	Port 161 Link Status	UNKNOWN	08-11-2009 10:01:53	241d 14h 23m 10s	3/3	SNMP problem - No data received from host
	Uptime	UNKNOWN	08-11-2009 09:53:54	241d 14h 25m 36s	3/3	SNMP problem - No data received from host
localhost	Root Partition	WARNING	08-11-2009 09:58:51	25d 16h 13m 23s	4/4	DISK WARNING - free space: / 1750 MB (18% inode=74%):
	Total Processes	WARNING	08-11-2009 10:00:37	13d 3h 3m 26s	4/4	PROCS WARNING: 345 processes with STATE = RSZDT
	Current Load	OK	08-11-2009 10:00:58	26d 5h 53m 10s	1/4	OK - load average: 0.13, 0.11, 0.09
	Current Users	OK	08-11-2009 10:03:02	675d 18h 16m 18s	1/4	USERS OK - 1 users currently logged in
	HTTP	OK	08-11-2009 10:03:20	17d 5h 45m 42s	1/4	HTTP OK HTTP/1.1 200 OK - 681 bytes in 0.001 seconds
	PING	OK	08-11-2009 10:01:00	675d 18h 15m 18s	1/4	PING OK - Packet loss = 0%, RTA = 0.05 ms
	SSH	OK	08-11-2009 10:00:31	657d 20h 27m 26s	1/4	SSH OK - OpenSSH_3.4p1 (protocol 1.99)
	Swap Usage	OK	08-11-2009 10:01:00	657d 20h 26m 49s	1/4	SWAP OK - 72% free (2937 MB out of 4094 MB)
netgearAtColo	PING	OK	08-11-2009 10:01:00	242d 3h 51m 8s	1/3	PING OK - Packet loss = 0%, RTA = 0.63 ms



Ganglia mrtg
SIPadm SCCM
JON Munin OracleCC
SCOM vCenter NAV
Nagios Graphite vCops
Cron
Pgcladmin Webhomer
tailnmail Command-Suite





No thanks!

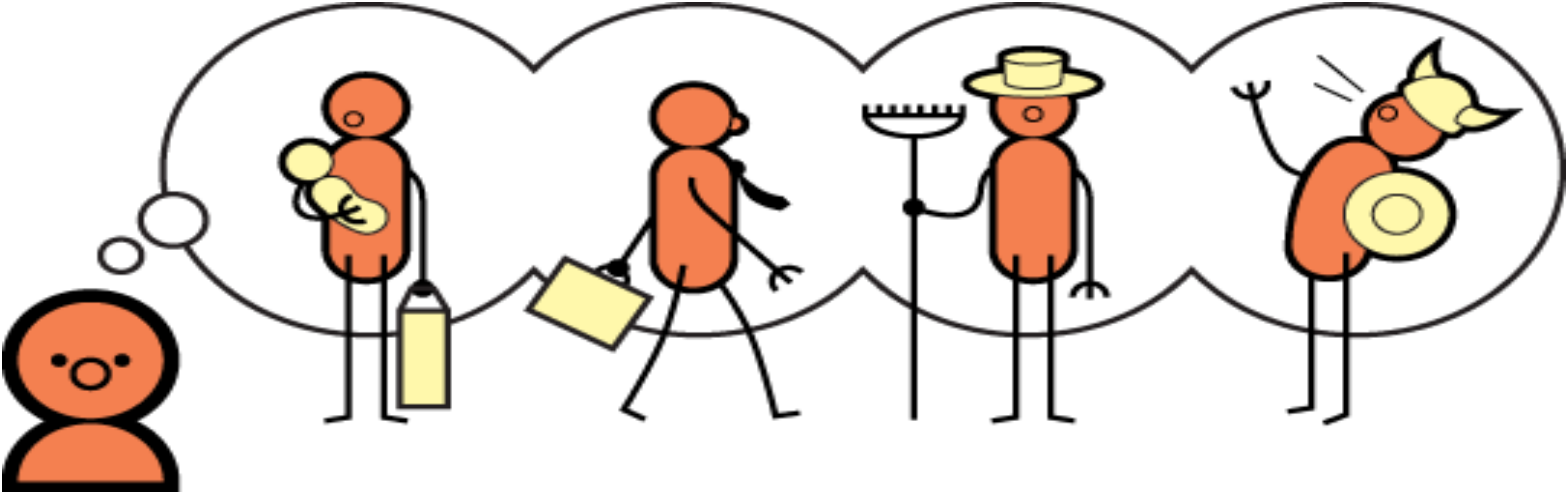
We are
too busy



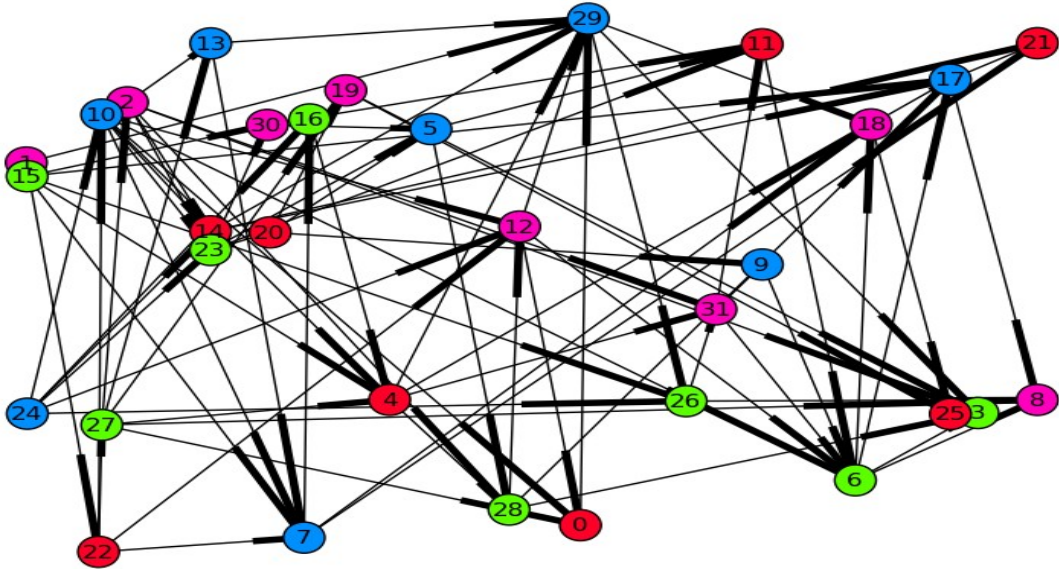
Distributed monitoring



Roles / usergroups



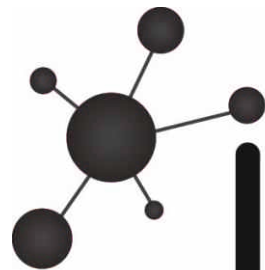
Dependencies / root cause



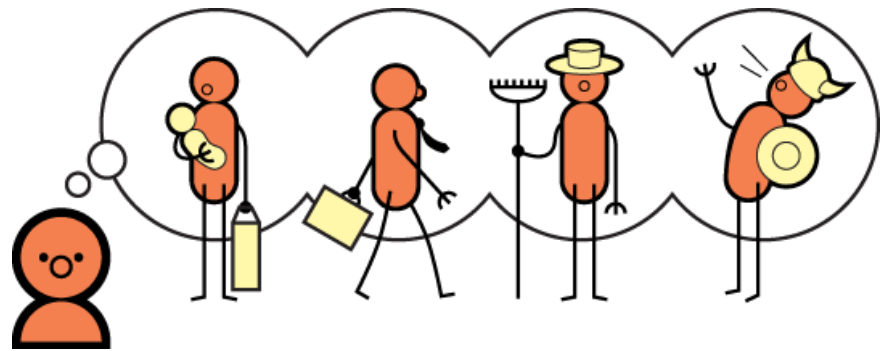
Integration / automation



ZABBIX



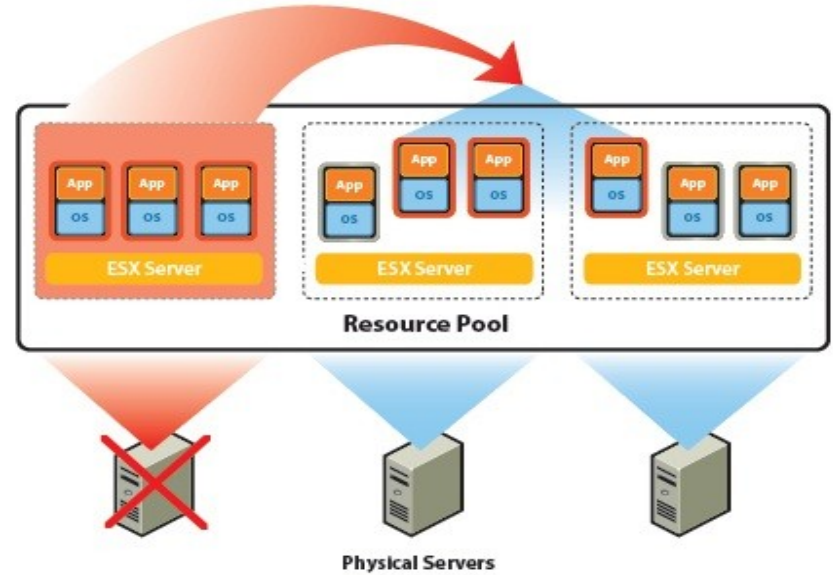
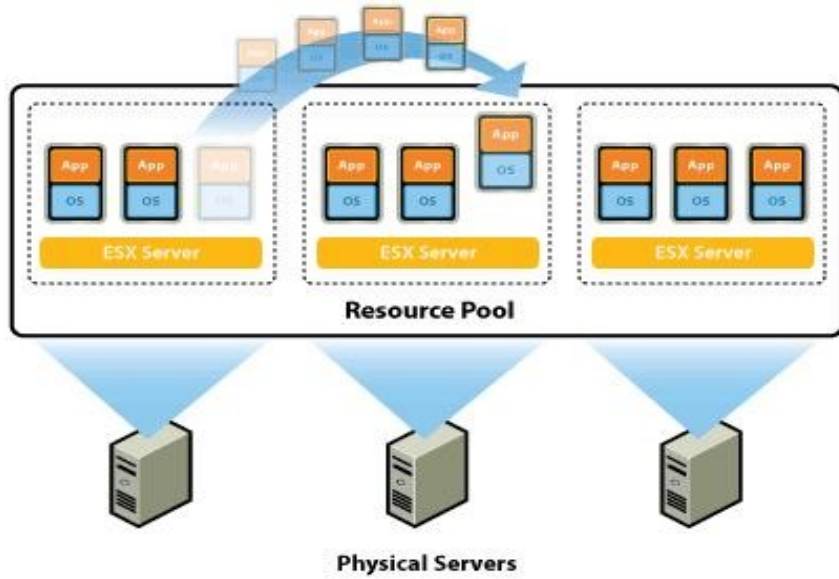
ICINGA

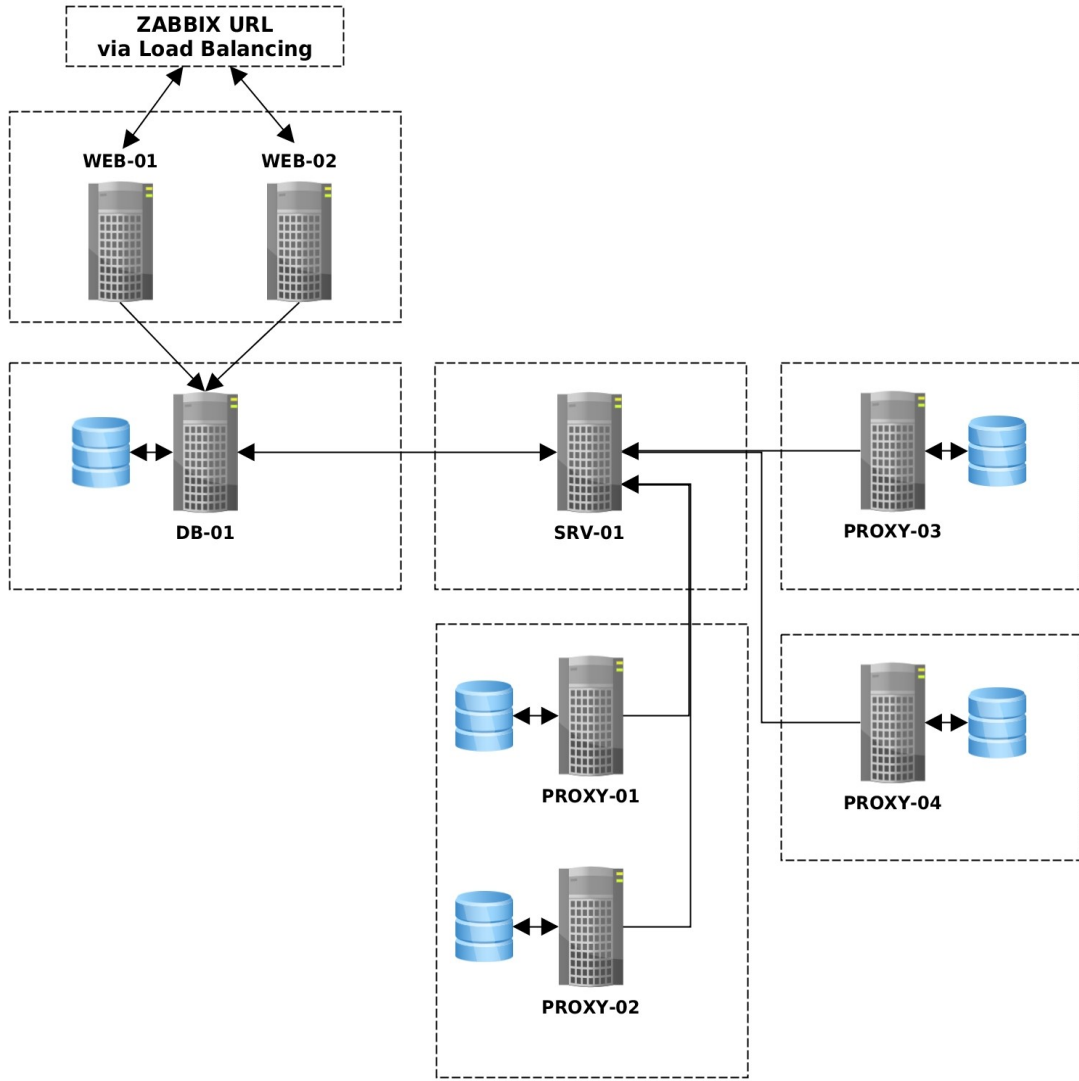


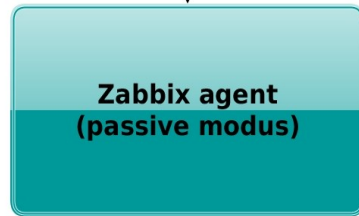
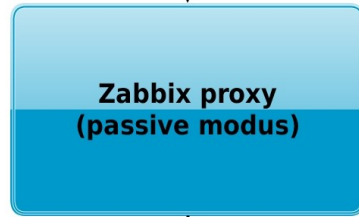
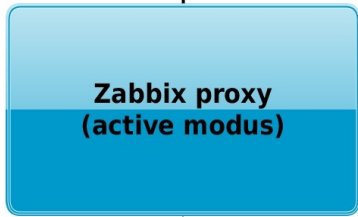


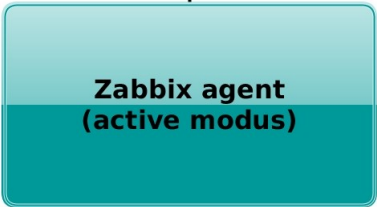
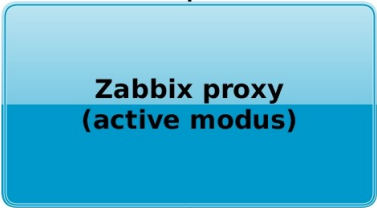


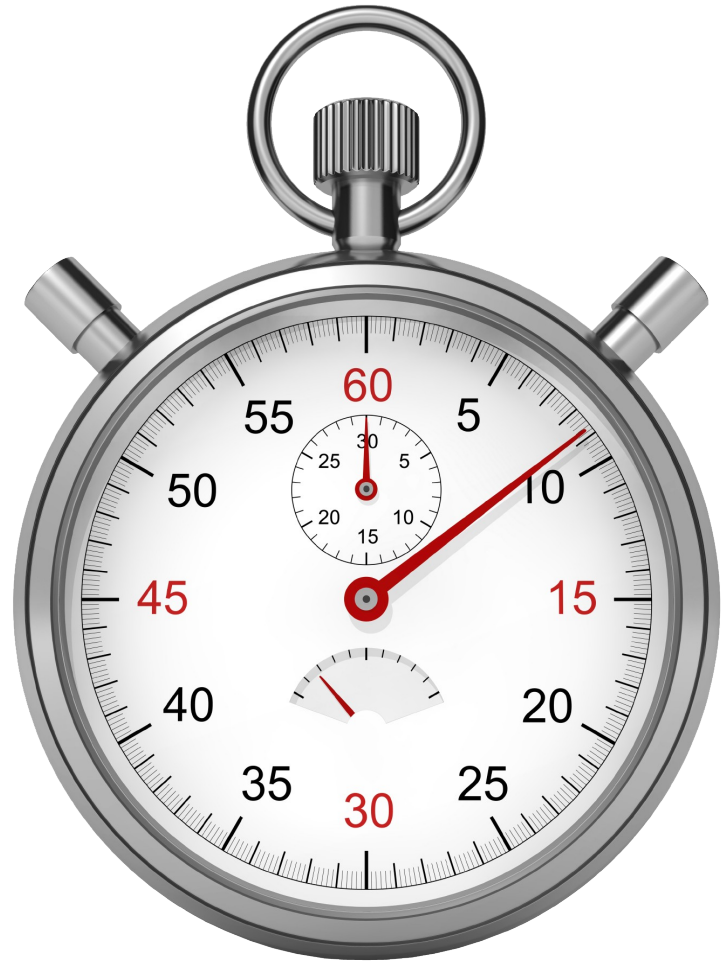
vmware DRS & HA













~3.000



~400



~320.000

~121.000.000/24H



~ 200.000

SiteAdmin = Owner

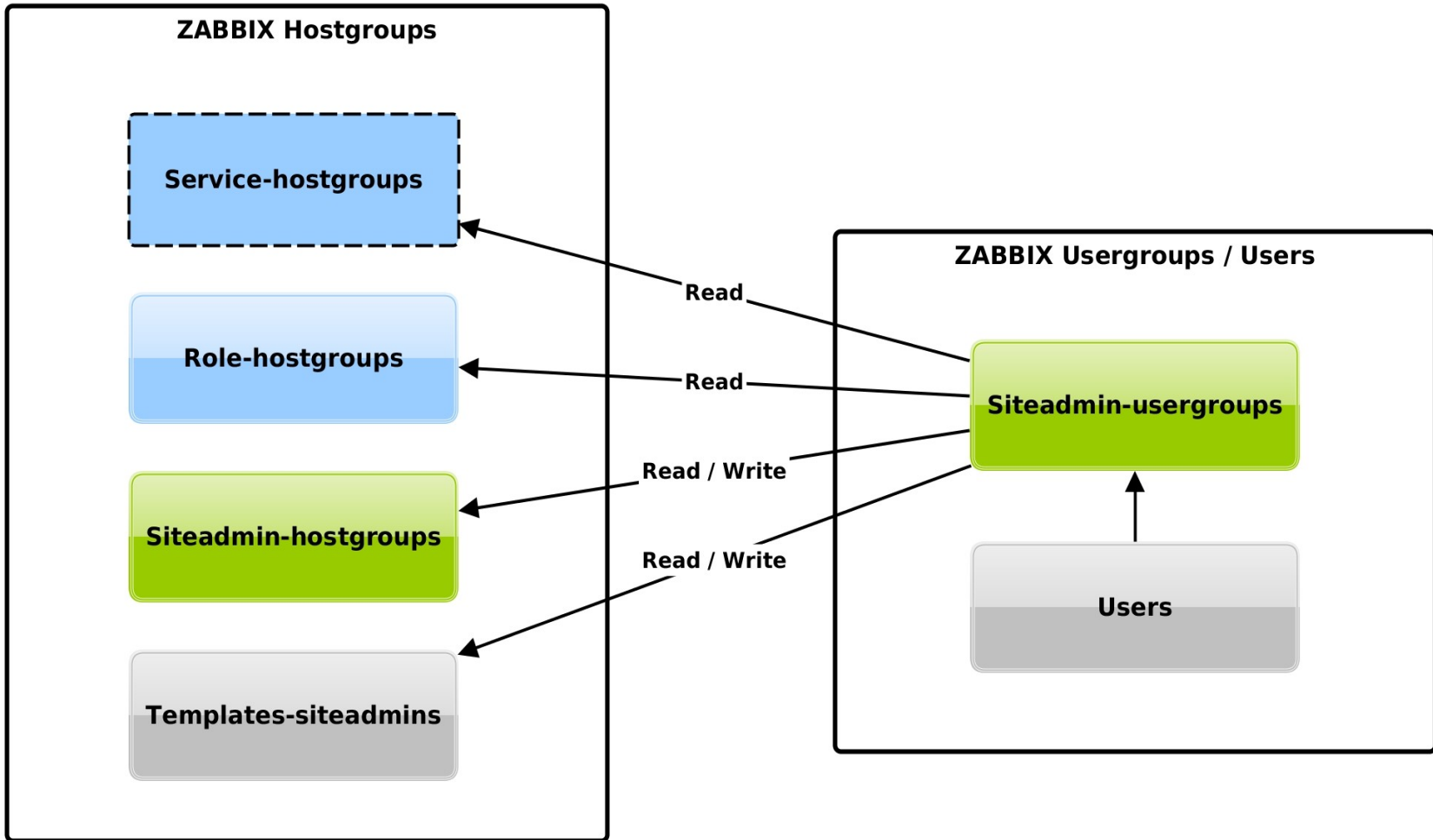
ZABBIX Hostgroups

Service-hostgroups

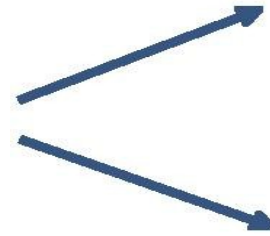
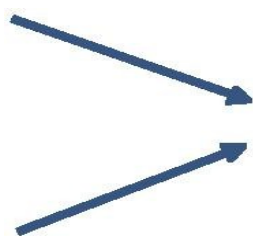
Role-hostgroups

Siteadmin-hostgroups

Templates-siteadmin

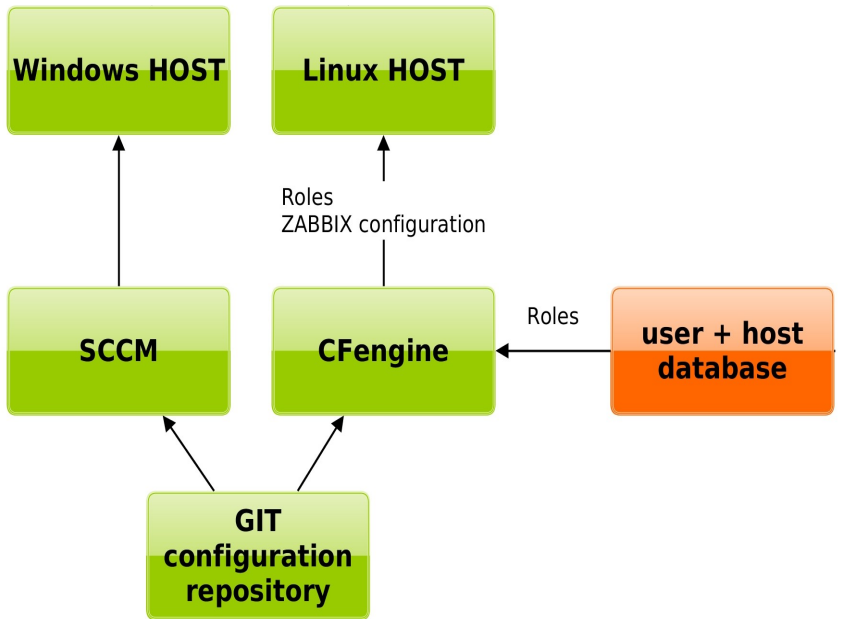


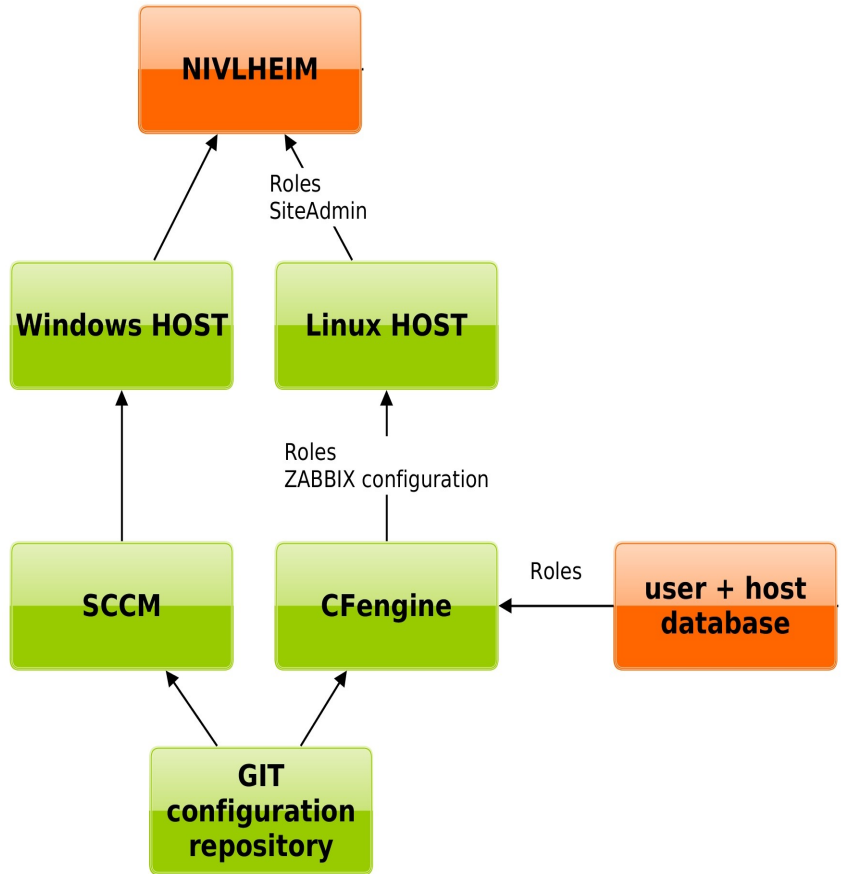
Nivlheim

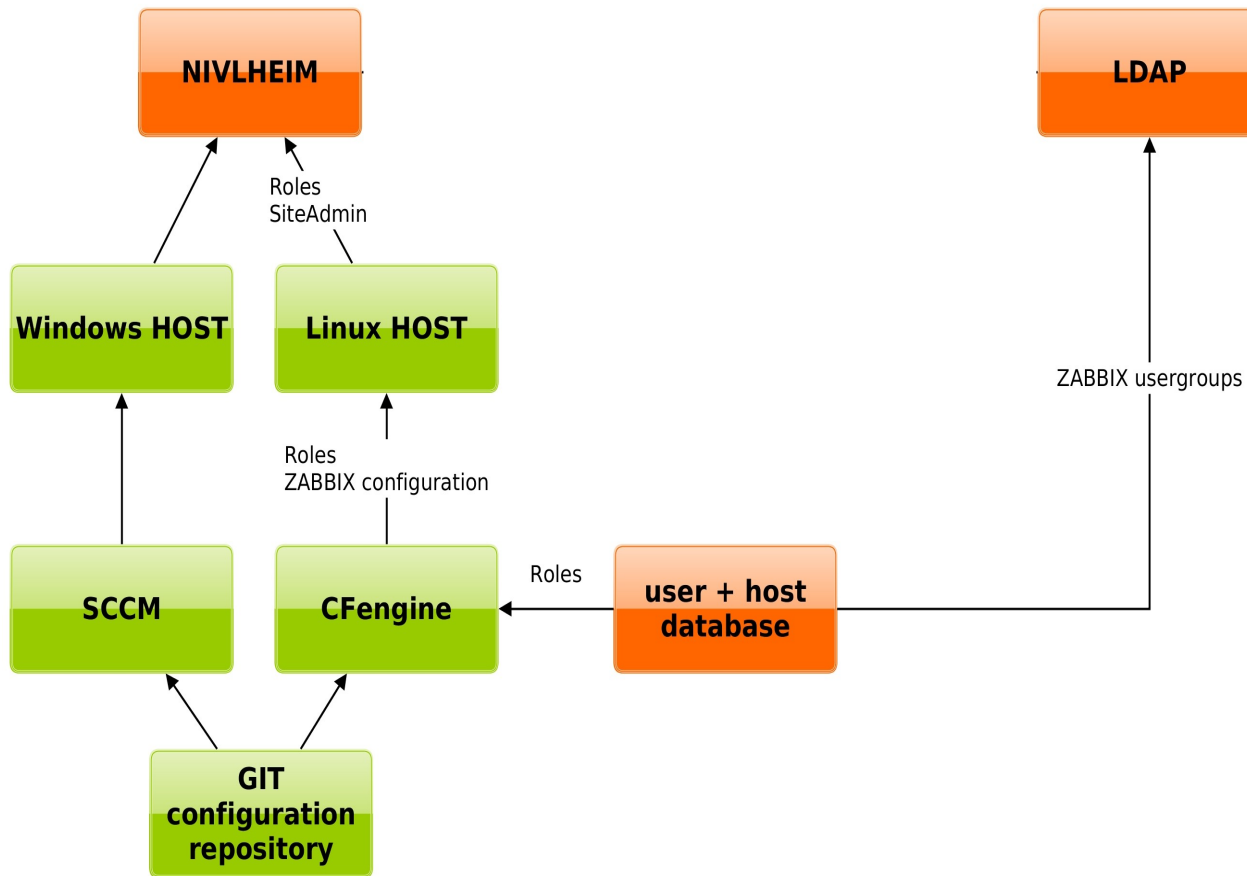


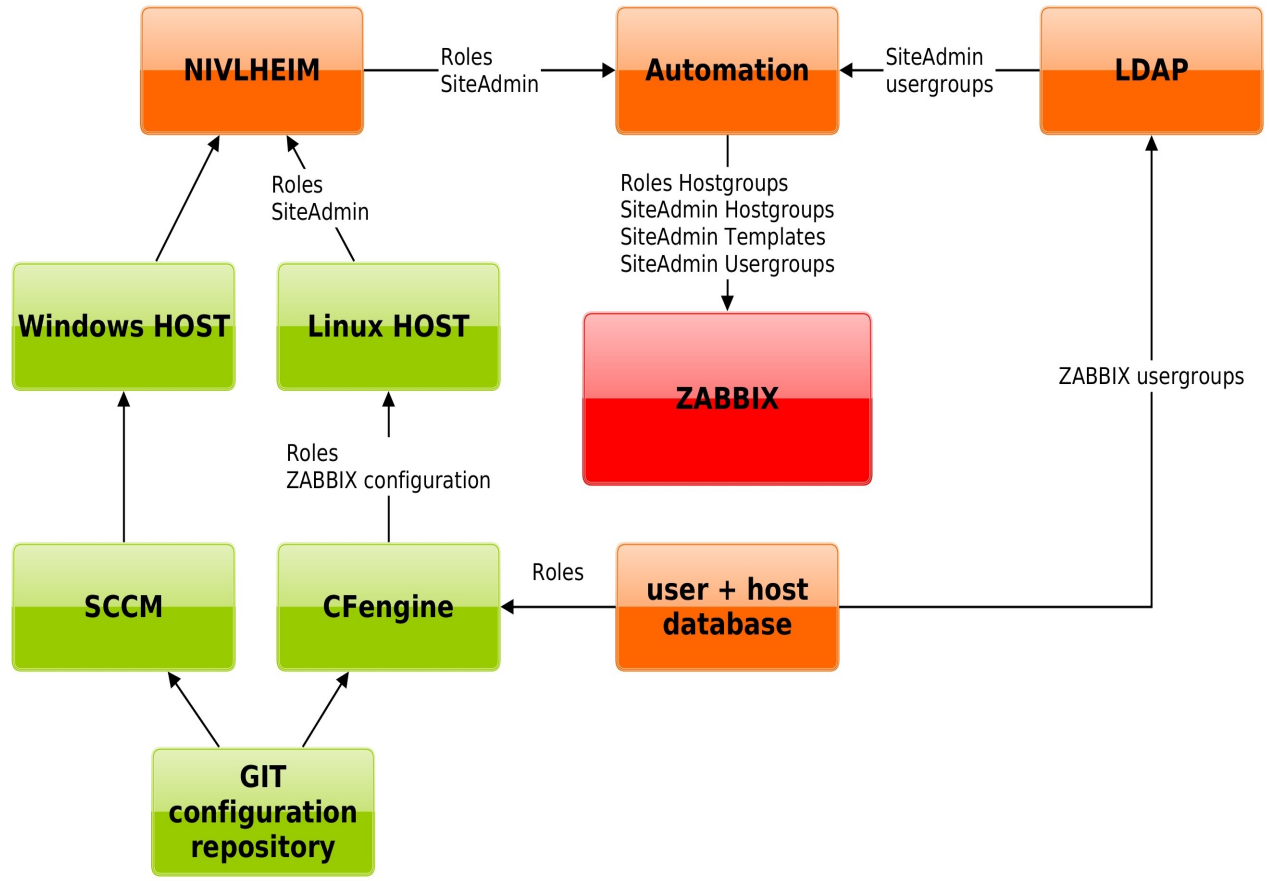
Windows HOST

Linux HOST















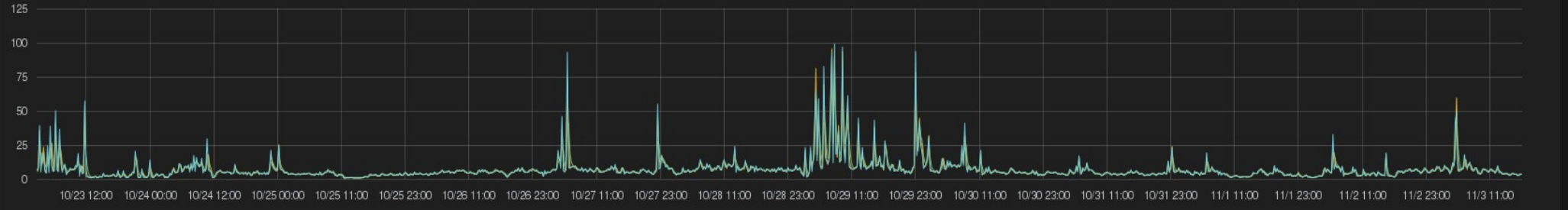
SELinux



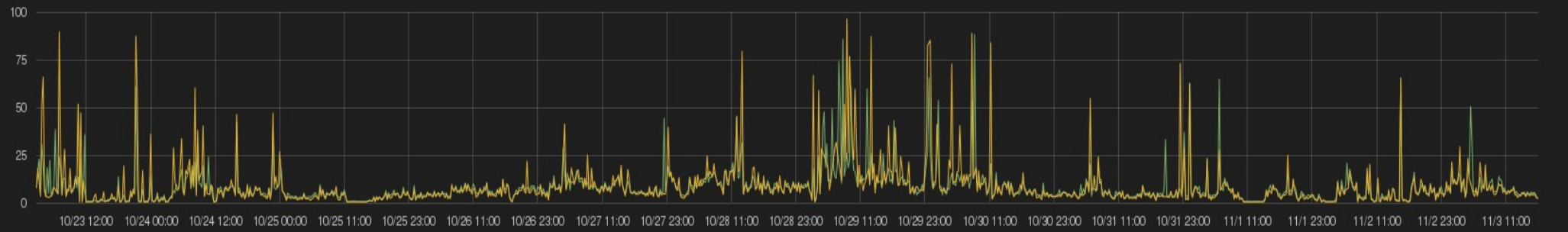
CPU



Load



Ping



Flame Graph

Search



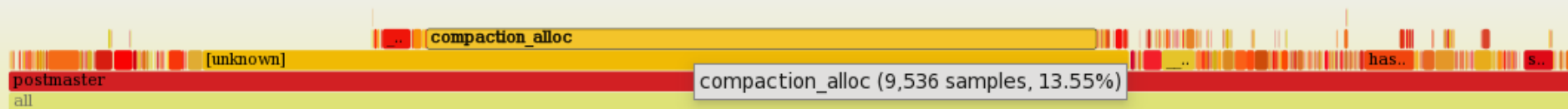
Function: postmaster (22,274 samples, 31.64%)

postmaster (22,274 samples, 31.64%)

Reset Zoom

Flame Graph

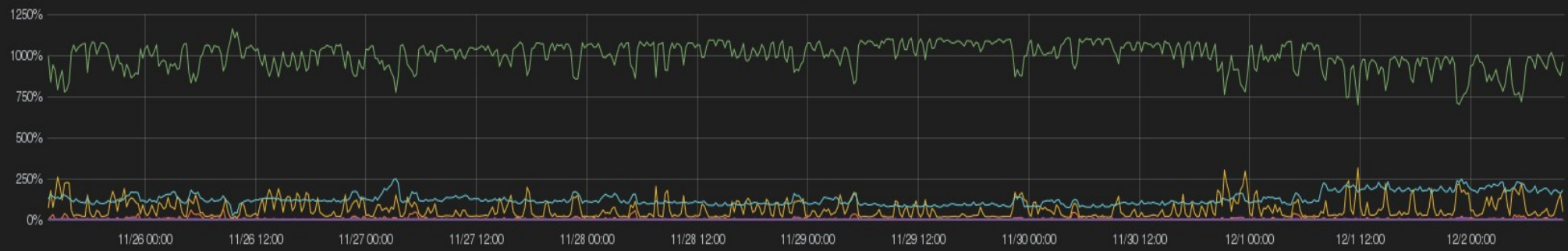
Search



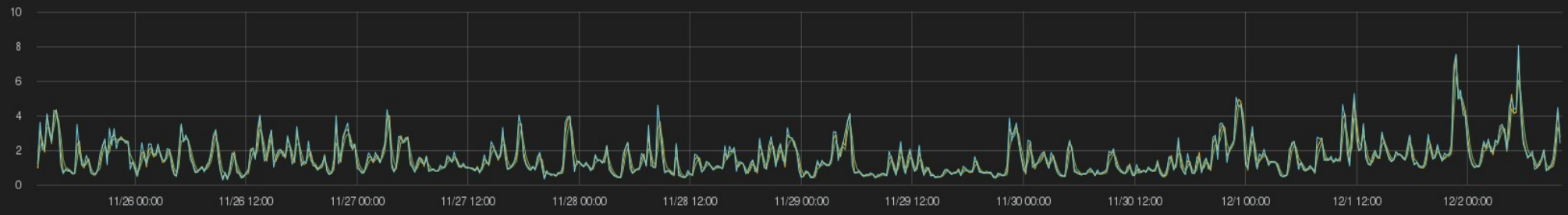
Function: compaction_alloc (9,536 samples, 13.55%)

compaction_alloc (9,536 samples, 13.55%)

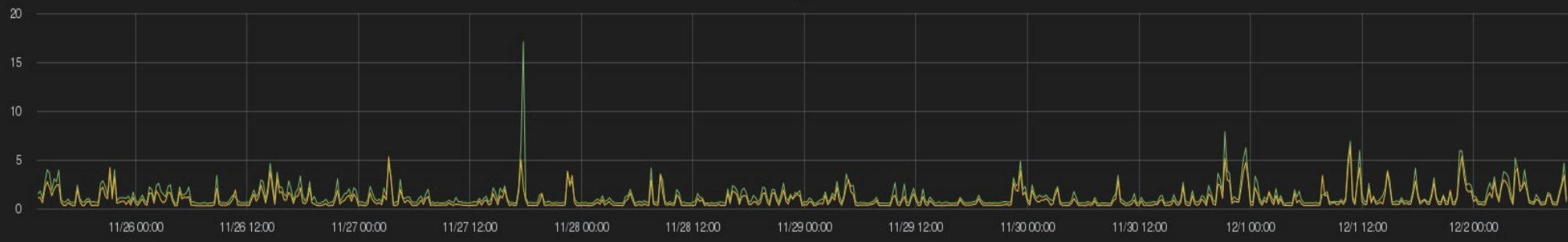
CPU



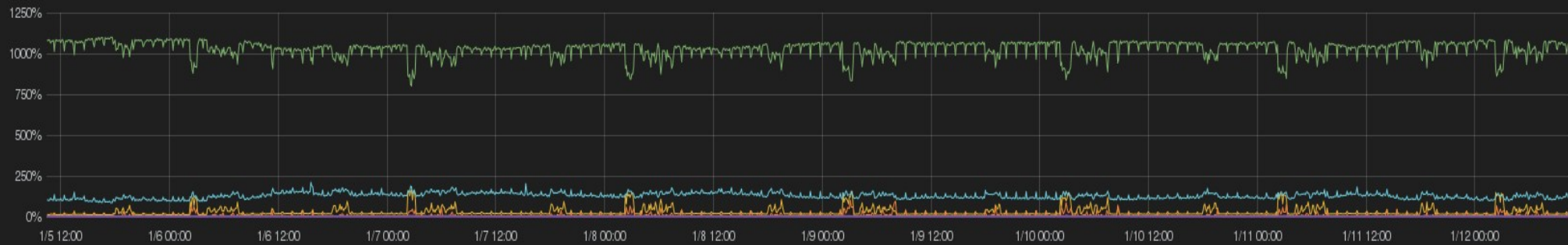
Load



Ping



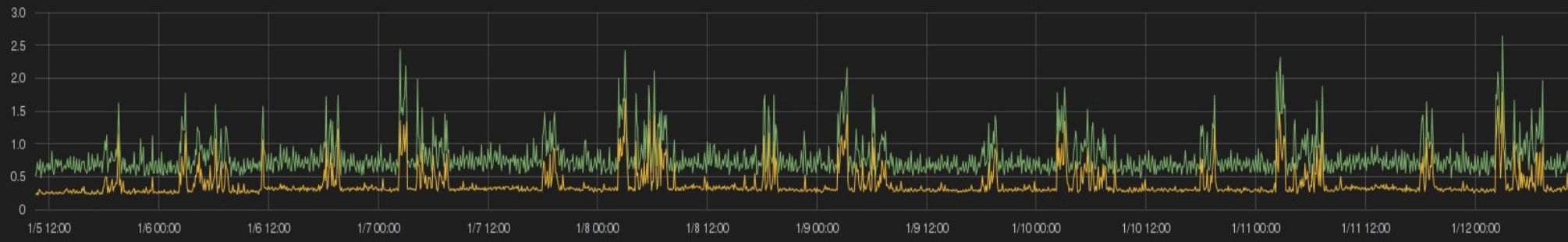
CPU



Load



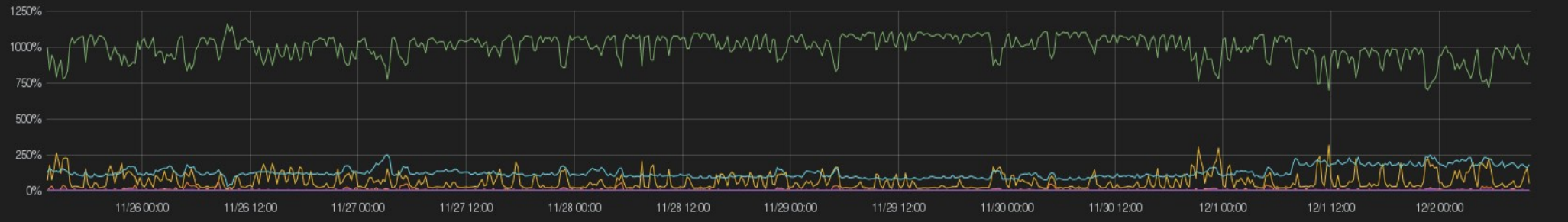
Ping



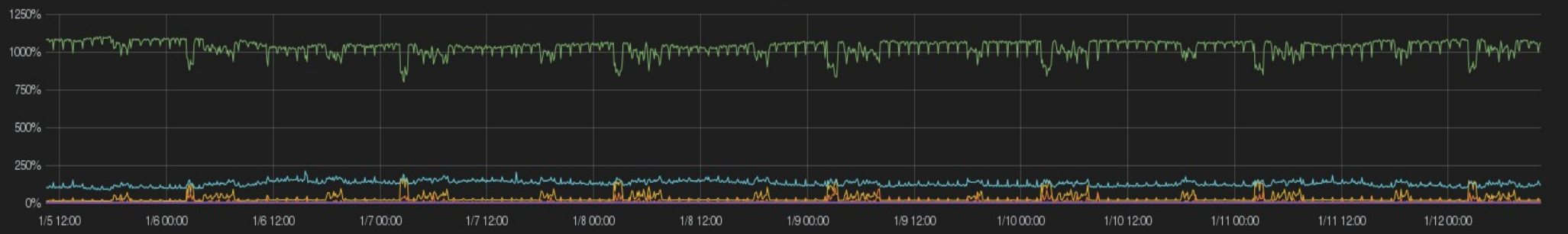
CPU

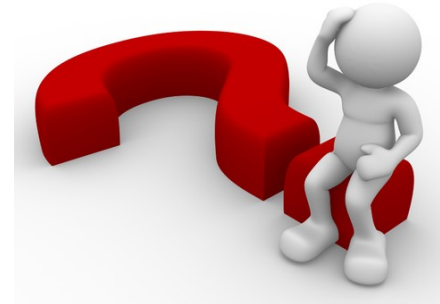


CPU



CPU





GRAFANA-ZABBIX

Uptime

1.535 week

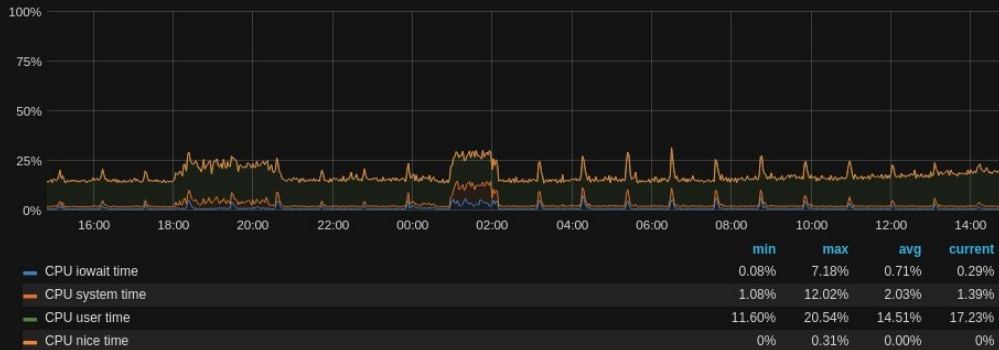
PostgreSQL Status

PostgreSQL is running

Zabbix agent status

Zabbix agent is running

CPU



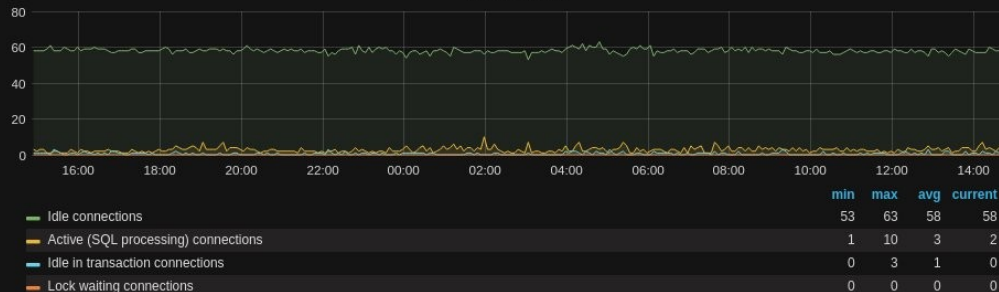
Memory available



PostgreSQL Processes



Connections



Transactions



Slow queries





Cluster name uio_prod	Cluster status green	Total documents 6.91 Bil	Docs/sec 4.51K ops	Primary shards 919	Active shards 1.838 K	Active shards % 100.00%	Indexes size 4.91 TiB	Used data disk 15.00%	Total nodes 9	Total data nodes 4
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Total CPU used				Mem heap used				Memory available			
Metric ^	Max	Avg	Current	Metric ^	Max	Avg	Current	Metric ^	Max	Avg	Current
es-client01.uio.no: CPU total used time	0.48%	0.21%	0.39%	es-client01.uio.no: jvm.mem.heap_used_percent	7.50%	4.44%	3.50%	es-client01.uio.no: Memory available in %	45.09%	42.13%	45.08%
es-client02.uio.no: CPU total used time	0.66%	0.37%	0.30%	es-client02.uio.no: jvm.mem.heap_used_percent	6.00%	3.44%	6.00%	es-client02.uio.no: Memory available in %	46.75%	43.85%	46.74%
es-data01.uio.no: CPU total used time	26.48%	3.34%	3.84%	es-data01.uio.no: jvm.mem.heap_used_percent	74.00%	53.08%	35.00%	es-data01.uio.no: Memory available in %	46.99%	45.73%	46.96%
es-data02.uio.no: CPU total used time	21.17%	3.20%	3.18%	es-data02.uio.no: jvm.mem.heap_used_percent	76.00%	50.41%	55.00%	es-data02.uio.no: Memory available in %	46.85%	45.43%	46.82%
es-data03.uio.no: CPU total used time	17.18%	2.97%	2.97%	es-data03.uio.no: jvm.mem.heap_used_percent	73.50%	56.68%	68.00%	es-data03.uio.no: Memory available in %	47.02%	45.44%	47.00%
es-data04.uio.no: CPU total used time	17.57%	3.03%	3.46%	es-data04.uio.no: jvm.mem.heap_used_percent	74.00%	51.13%	63.00%	es-data04.uio.no: Memory available in %	70.94%	45.78%	47.21%
es-master01.uio.no: CPU total used time	2.17%	0.41%	0.43%	es-master01.uio.no: jvm.mem.heap_used_percent	2.00%	0.68%	0%	es-master01.uio.no: Memory available in %	48.16%	47.97%	48.15%
es-master02.uio.no: CPU total used time	2.60%	0.57%	1.60%	es-master02.uio.no: jvm.mem.heap_used_percent	2.00%	1.12%	2.00%	es-master02.uio.no: Memory available in %	47.97%	47.95%	47.96%
es-master03.uio.no: CPU total used time	2.61%	0.42%	0.09%	es-master03.uio.no: jvm.mem.heap_used_percent	2.00%	0.68%	2.00%	es-master03.uio.no: Memory available in %	48.12%	48.11%	48.12%

- ELK dashboards
- ElasticSearch - Documents overview
 - ElasticSearch - Nodes overview
 - ElasticSearch - Node details
 - Elasticsearch - Cluster global overview
 - Elasticsearch - Indexes health
 - Logstash/query overview

Elasticsearch ZABBIX alarms

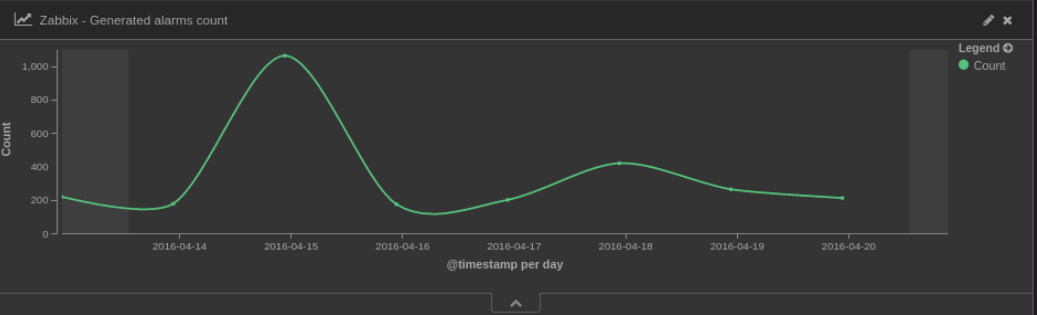
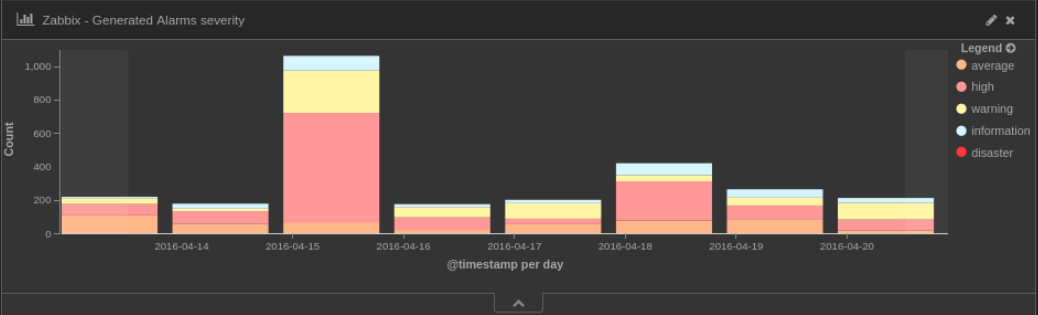
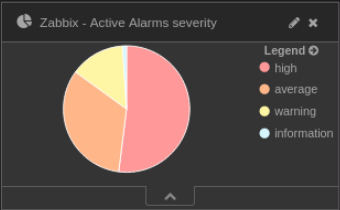
Host	Status	Severity	Issue	Last change	Age	Info
es-master01.uio.no	Problem	High	CFENGINE client is not running on this host	05 Sep 2016 09:33:00	6 hours	
es-master01.uio.no	Problem	Average	CROND is not running on this host	05 Sep 2016 09:33:00	6 hours	

ELK - ZABBIX

Zabbix alarms overview

Zabbix - Total active alarms

100
Count

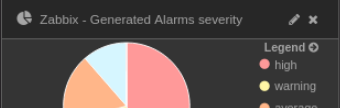


Zabbix - All active alarms

Time	timestamp	alarm_status	hostname	ip	alarm_severity	ack_status	alarm_name
▶	April 20th 2016, 14:17:51.099	PROBLEM	-	129.240.188.198	Average	No	The disk /home has used more than 95% of total diskspace (Free: 4.96 %)
▶	April 20th 2016, 13:51:56.645	PROBLEM	-	129.240.133.10	High	No	Host is unavailable via ICMP ping
▶	April 20th 2016, 13:03:17.277	PROBLEM	-	129.240.3.146	Average	No	The disk /dbfiles/dbora-uio-test01/ora01 has used more than 92% of total diskspace (Free: 7.95 %)
▶	April 20th 2016, 11:22:46.053	PROBLEM	-	129.240.188.214	Average	No	The disk /var has used more than 95% of total diskspace (Free: 4.98 %)
▶	April 20th 2016, 10:45:47.669	PROBLEM	-	129.240.120.181	High	No	Host is unavailable via ICMP ping
▶	April 20th 2016, 10:37:19.498	PROBLEM	-	129.240.102.243	High	No	[KANT] - The virtual volume kant-med-fs02/med-imb-pkanne is full
▶	April 20th 2016, 09:08:59.791	PROBLEM	-	0.0.0.0	Average	No	Instance [w3utvyb02-foransatte-2] has problems with the database
▶	April 20th 2016, 09:07:51.991	PROBLEM	-	0.0.0.0	Average	No	Instance [w3utvyb03-foransatte-1] has problems with the database
▶	April 20th 2016, 09:07:18.835	PROBLEM	-	129.240.170.80	Average	No	Instance fw3testib04-minestudier-21 has problems with the database

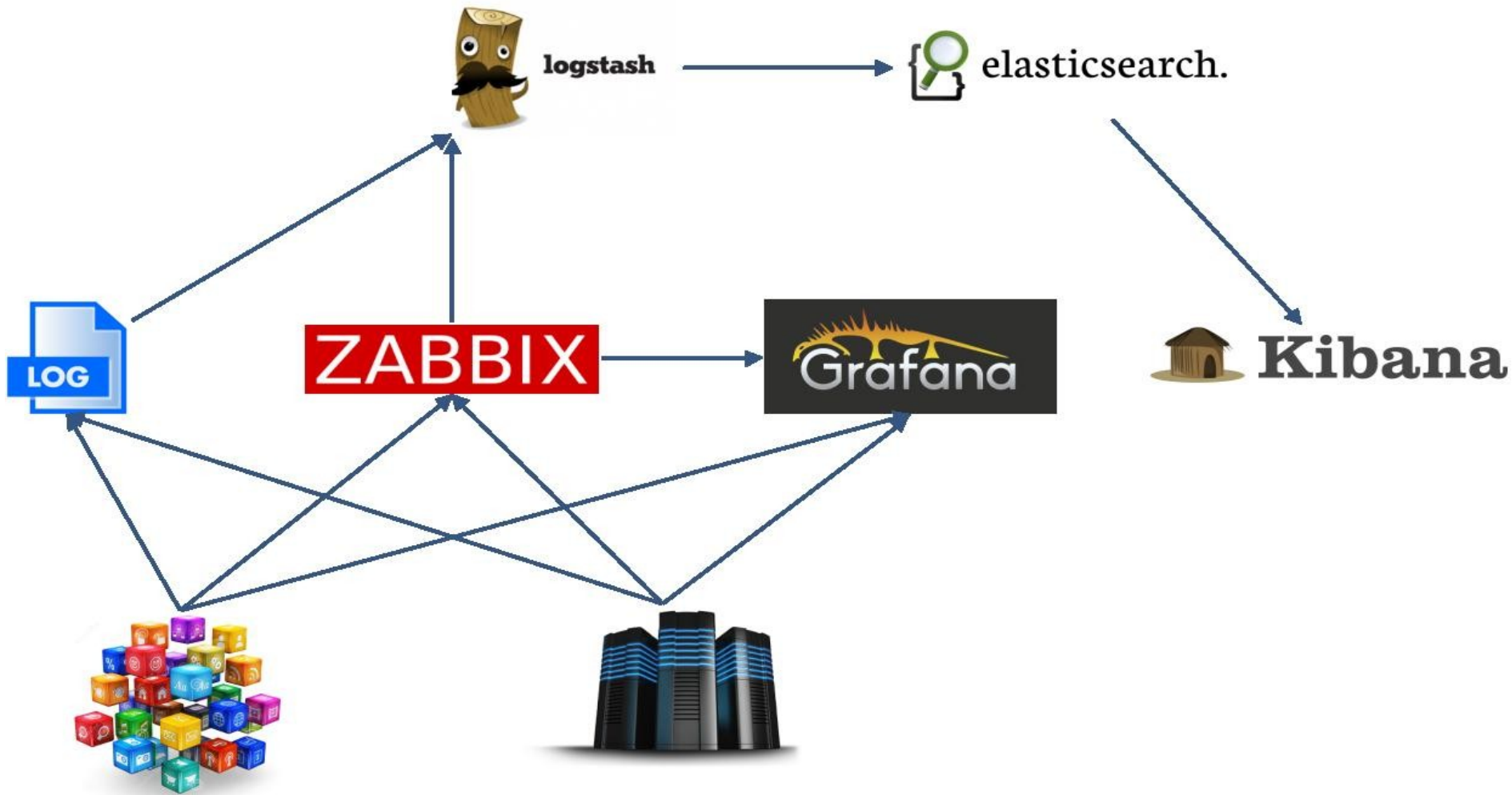
Zabbix - Total generated alarms

2,749
Count



Zabbix - All generated alarms

Time	timestamp	alarm_status	hostname	ip	alarm_severity	ack_status	alarm_name
▶	April 20th 2016, 14:23:33.772	OK	-	129.240.253.202	Information	No	VoIP: SIP ping voipstest2-sbc2 softphone
▶	April 20th 2016, 14:20:30.583	OK	-	129.240.4.68	Warning	No	[fsweb.no:443/evuweb/sjekk] - jboss sjekk code
▶	April 20th 2016, 14:17:51.099	PROBLEM	-	129.240.188.198	Average	No	The disk /home has used more than 95% of total diskspace (Free: 4.96 %)
▶	April 20th 2016, 14:12:19.459	OK	-	129.240.4.68	Warning	No	[fsweb.no:443/evuweb/sjekk] - jboss sjekk code
▶	April 20th 2016, 14:07:10.002	OK	-	129.240.4.68	Warning	No	[fsweb.no:443/evuweb/sjekk] - jboss sjekk code
▶	April 20th 2016, 14:04:00.520	OK	-	129.240.4.68	Warning	No	[fsweb.no:443/evuweb/sjekk] - jboss sjekk code





"Difficult roads
often lead to
beautiful
destinations."

ybl

-author unknown

WHY **HOW**
WHAT **WHEN**
WHO **WHERE**

