

ICINGA2 IN THE MIDDLE OF YOUR TOOLSTACK

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 - Working @netways
- **@gethash**



www.icinga.org

ICINGA – OPEN SOURCE MONITORING



ICINGA - COMMUNITY





European Organisation
for Nuclear Research



You?



ICINGA - EVENTS

Icinga Camp – Berlin 2016

March 1st

<https://www.icinga.org/community/events/icinga-camp-berlin/>



ICINGA - INTRODUCTION

Quick Poll

Open Source Monitoring

Icinga is a **scalable** and **extensible** monitoring system which checks the **availability** of your resources, notifies users of outages and provides extensive **BI** data.

Icinga Quality, Testing and Community Support

Icinga.org, dev.icinga.org, social media channels

Icinga Web 2

Icinga Reports

Icinga Doc

Icinga Web

Icinga 2

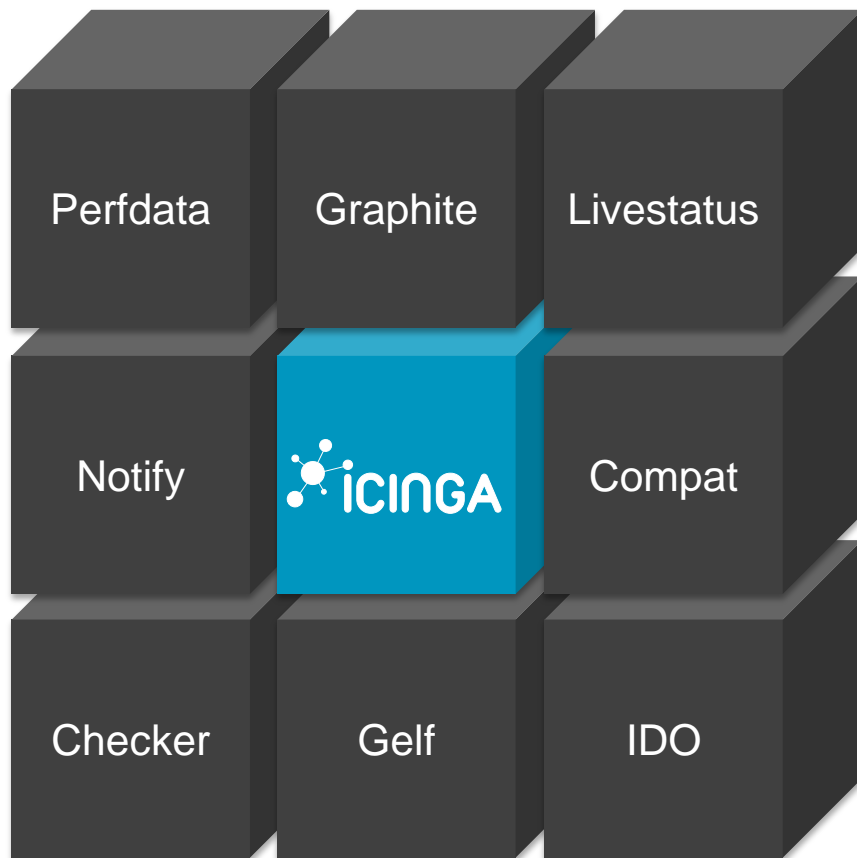
Icinga Classic (CGI)

3rd Party Tools

Icinga

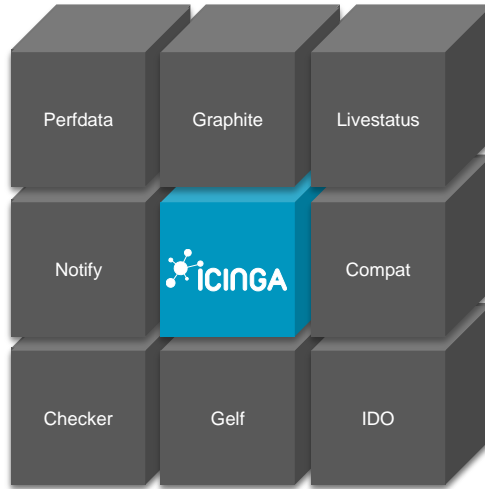


ICINGA2

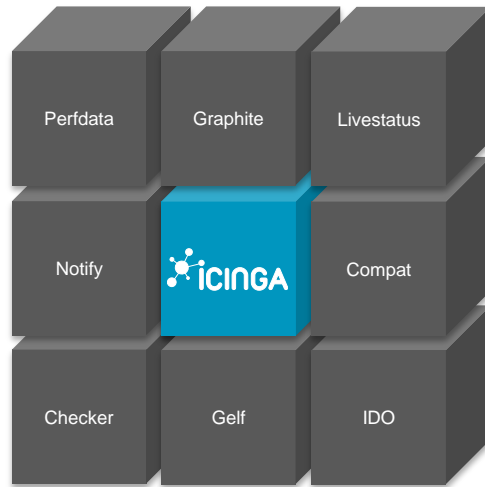


- **Multithreaded**
- **Modular Features**
- **Zone** support
- **Secure Agent**
- **No Nagios®**

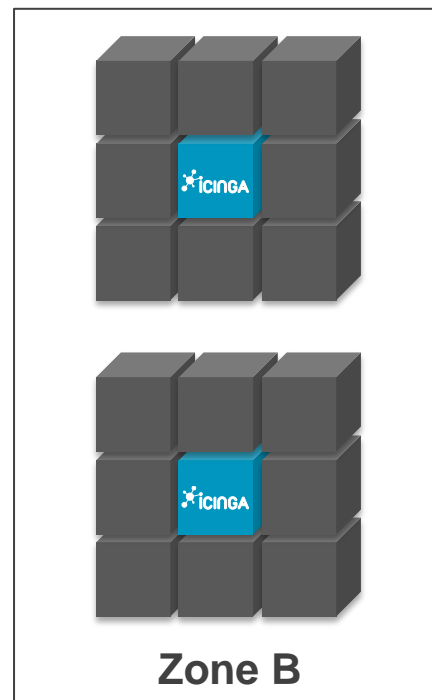
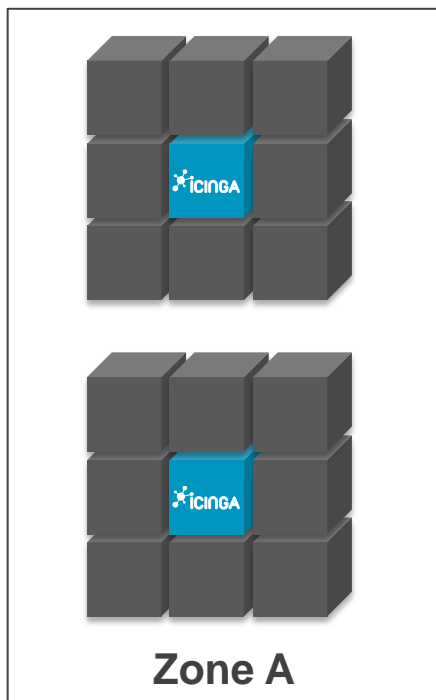
- Availability and **scaling** zones
- Automatic **redistribution** of checks
- Zones for **multitenancy** environments



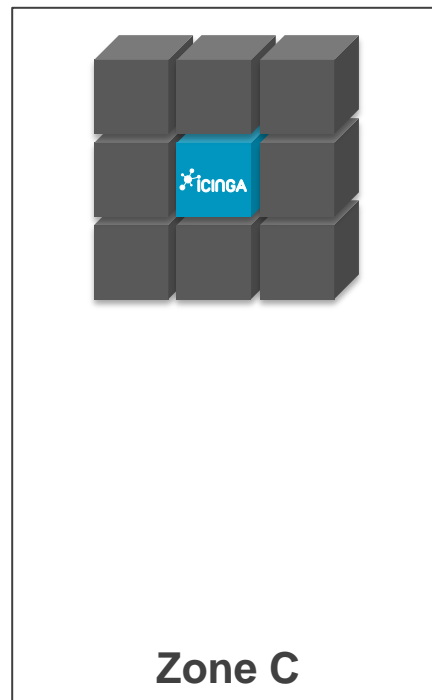
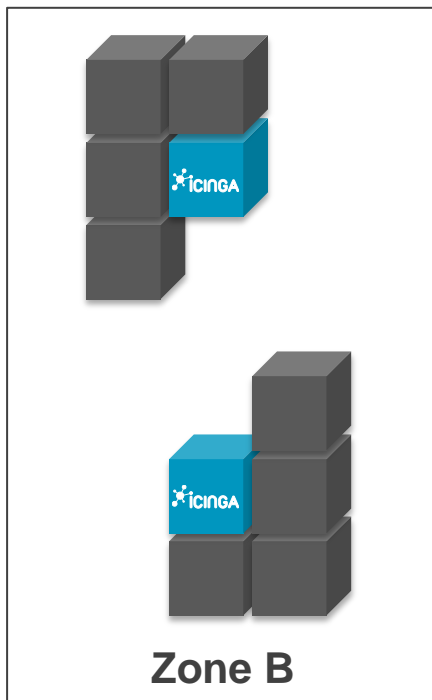
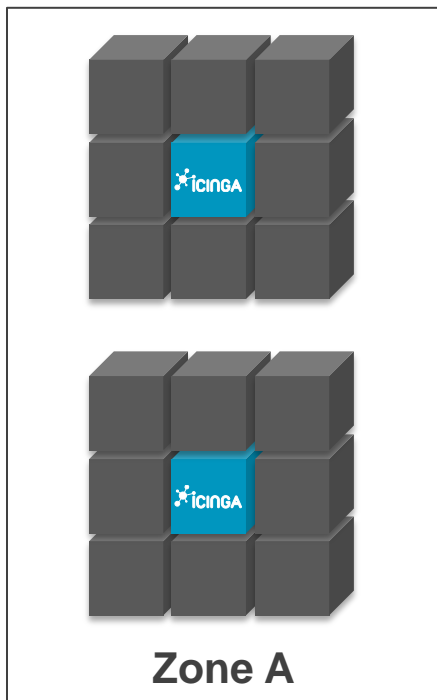
High Availability



Distributed Features



Zoning



Advanced Zoning



ICINGA2 - GRAPHITE

New Graphite Schema

icinga2.\$host.name\$.host.\$host.check_command\$

icinga2.\$host.name\$.services.\$service.name\$.\$service.check_command\$

Threshold metrics

enable_send_thresholds

<prefix>.perfddata.<perfddata-label>.min

<prefix>.perfddata.<perfddata-label>.max

<prefix>.perfddata.<perfddata-label>.warn

<prefix>.perfddata.<perfddata-label>.crit

Metadata metrics

enable_send_metadata

<prefix>.metadata.current_attempt

<prefix>.metadata.downtime_depth

<prefix>.metadata.execution_time

<prefix>.metadata.latency

<prefix>.metadata.max_check_attempts

<prefix>.metadata.reachable

<prefix>.metadata.state

<prefix>.metadata.state_type

Demo



ICINGA2 - CONFIGURATION



Enhanced configuration language

```
assign where match("*mysql*", host.name) &&  
apply Notification "notify-customer" to Service { ...  
apply Service "ssh" { ...  
apply Service for (identifier => oid in host.vars.oids) { ...  
if (get_time_period("9to5").is_inside) { ...
```

https://localhost:5665/ - Icinga Studio

File Help

- ApiListener
- ApiUser
- CheckCommand
- CheckerComponent
- Comment
- Dependency
- Downtime
- Endpoint
- EventCommand
- FileLogger
- Host
- HostGroup
- IcingaApplication
- IcingaStatusWriter
- Notification
- NotificationCommand
- NotificationComponent
- ScheduledDowntime
- Service
- ServiceGroup
- TimePeriod
- User
- UserGroup
- Zone

Name		
srv-ts.int.netways.de/users		
srv-ts.int.netways.de/swap		
srv-ts.int.netways.de/procs		
srv-ts.int.netways.de/ping6		
srv-ts.int.netways.de/ping4		
srv-ts.int.netways.de/load		
srv-ts.int.netways.de/icinga		
srv-ts.int.netways.de/disk C:		
srv-ts.int.netways.de/disk		

force_next_check	False	Boolean
force_next_notification	False	Boolean
groups	windows-servers	Array
ha_mode	0	Number
icon_image		String
icon_image_alt		String
last_check	1447657384.913	Number
[-] last_check_result		CheckResult
active	True	Boolean
check_source	srv-ts.int.netways.de	String
command	C:\Program Files (x86)\ICINGA2\sbin/check_ping, -	Array
execution_end	1447657384.913	Number
execution_start	1447657379.594	Number
exit_status	0	Number
output	PING OK RTA: 0ms Packet loss: 0%	String
performance_data	rta=0ms;3000;5000;0;, pl=0%;80;100;0;100	Array
schedule_end	1447657384.913	Number
schedule_start	1447657439.59	Number
state	0	Number
[-] vars_after		Dictionary

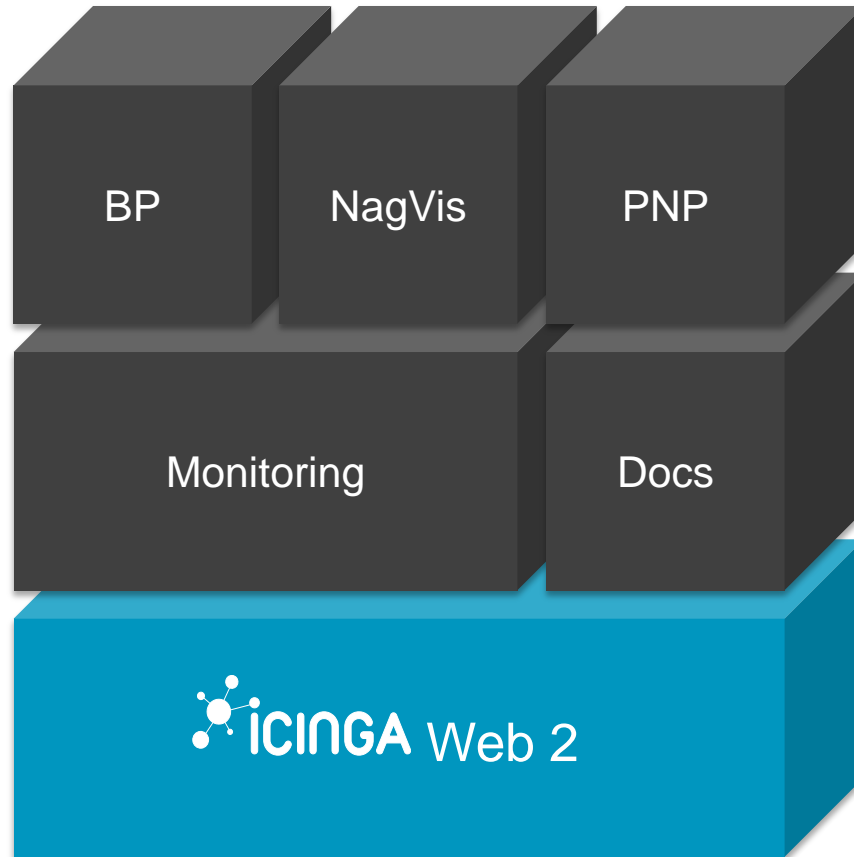
Icinga Studio



ICINGA WEB 2

- **Easy** to extend and embed
- **JSON** and **CSV** export
- Support for **MySQL** and **PostgreSQL**
- **Responsive** layout

- Developed in **PHP 5.3**
- **Multiple** authentication methods
 - Active Directory, LDAP and DB
 - Via Webserver, e.g. Kerberos
 - May be **chained**



Demo



ICINGA2 - API



- **HTTP** with **RESTful** Url Schema
- **ApiUser** config object
- **X.509** and/or **Basic Auth**

ApiUser Object

```
# vim /etc/icinga2/conf.d/api-users.conf
```

```
object ApiUser "root" {  
    password = "icinga"  
    permissions = [ "*" ]  
}
```

ApiUser Permissions

```
permissions = [  
  {  
    permission = "objects/query/Host "  
    filter = {{ regex("^Linux", host.vars.os) }}  
  },  
  {  
    permission = "objects/query/Service "  
    filter = {{ regex("^Linux", service.vars.os) }}  
  }  
]
```

- create, modify and delete **objects**
- **retrieve** information and **run actions**
- **subscribe** to events
- **manage configuration** packages

- **Configuration management**
 - New standard **config** API
 - Support for **Packages** and **Stages**
 - Support for **Zones**

- **Event Streams**

- **Based on Types and Filters**

*CheckResult, StateChange, Notification,
AcknowledgementSet, AcknowledgementCleared,
CommentAdded, CommentRemoved, DowntimeAdded,
DowntimeRemoved, DowntimeTriggered*

- **Example**

/v1/events?queue=osmc&types=CheckResult

- **Status, Objects, Actions and Events**

- **Simple filter**

- *services?service=localhost!ping6*

- **Advanced filter**

- *type=Service&filter=service.name=="ping6"*

Demo



ICINGA WEB 2 - DIRECTOR

Edit sync rule

Properties



Sync properties:

Add sync property rule

Source name	Source field	Destination
Puppet DB (PE 2015, test)	\$(classes)	vars.puppet_classes
Puppet DB (PE 2015, test)	\$(facts)	vars.facts
Puppet DB (PE 2015, test)	generic-host	import

Edit sync property rule



Edit sync property rule

Hosts from PuppetDB (PE2015)

Source Name* Puppet DB (PE 2015, test)

Source Column* facts

Destination Field*

Priority*

Filter Expression

Merge Policy*

- please choose -

certname

classes

facts

facts.aio_agent_build

facts.aio_agent_version

facts.architecture

facts.augeas

facts.augeasversion

facts.bios_release_date

facts.bios_vendor

facts.bios_version

facts.blockdevices

facts.blockdevice_sda_model

facts.blockdevice_sda_size

facts.blockdevice_sda_vendor

facts.blockdevice_sr0_model

facts.blockdevice_sr0_size

facts.blockdevice_sr0_vendor

facts.boardmanufacturer

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Activity Log

< 1 2 3 4 5 6 7 ... 507 508 >

Timestamp	Author	Action
2015-11-05 23:01:41	cli	modify host "pe2015.example.com"
2015-11-05 14:46:09	cli	modify host "pe2015.example.com"
2015-11-05 14:20:23	cli	modify host "pe2015.example.com"
2015-11-05 14:19:56	tom	modify command "ping"
2015-11-05 14:19:37	tom	modify command "ping"
2015-11-05 14:19:27	tom	modify command "ping"
2015-11-05 14:19:19	tom	modify command "ping"
2015-11-05 14:19:10	tom	modify command "ping"
2015-11-05 14:18:56	tom	modify command "ping"
2015-11-05 14:16:11	cli	modify host "pe2015.example.com"
2015-11-05 14:15:20	cli	modify host "pe2015.example.com"
2015-11-05 14:14:50	tom	modify command "ping"

pe2015.example.com config diff

```

92     "kernelrelease" = "3.19.0-31-generic"
93     "kernelversion" = "3.19.0"
94     "load_averages" = {
95         "15m" = 0.85
96         "1m" = 0.68
97         "5m" = 0.45
98     }
99     "lsbdistcodename" = "trusty"
100    "lsbdistdescription" = "Ubuntu 14.04.3 LTS"
...
106    "manufacturer" = "Dell Inc."
107    "memory" = {
108        "system" = {
109            "available" = "8.14 GiB"
110            "available_bytes" = 8742801408
111            "capacity" = "47.74%"
112            "total" = "15.58 GiB"
113            "total_bytes" = 16728535040
114            "used" = "7.44 GiB"
115            "used_bytes" = 7985733632
116        }
117    }

```

```

92     "kernelrelease" = "3.19.0-31-generic"
93     "kernelversion" = "3.19.0"
94     "load_averages" = {
95         "15m" = 0.53
96         "1m" = 1.19
97         "5m" = 0.82
98     }
99     "lsbdistcodename" = "trusty"
100    "lsbdistdescription" = "Ubuntu 14.04.3 LTS"
...
106    "manufacturer" = "Dell Inc."
107    "memory" = {
108        "system" = {
109            "available" = "8.09 GiB"
110            "available_bytes" = 8681525248
111            "capacity" = "48.10%"
112            "total" = "15.58 GiB"
113            "total_bytes" = 16728535040
114            "used" = "7.49 GiB"
115            "used_bytes" = 8047009792
116        }
117    }

```



ICINGA ROADMAP – WHAT'S NEXT?

We plan to release **more modules** for **Icinga**
Web 2 in the next months

We'll release a **web based configuration module** on the 1st March

- **Icinga 2.4.3 is out now!**
- **Icinga Web 2.2 is planned for Q1 2016**



OUR VISION

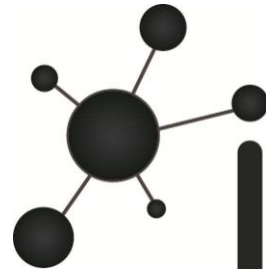
OpenTSDB



logstash



InfluxDB



icinga

graylog



CHEF™



puppet
labs



ANSIBLE



OTRS



CONCLUSION

- Download **Icinga 2** and **Icinga Web 2**
- Or play with the **Vagrant boxes**
- **Rethink** your configuration
- Give us **feedback**

THANK YOU!

www.icinga.org

 @icinga

dev.icinga.org

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git.icinga.org

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