

Serverüberwachung mit Icinga

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KURZVORSTELLUNG

IPMI

SHOWCASES

IPMI IN ICNGA

FRAGEN UND ANTWORTEN

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KURZVORSTELLUNG

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- Senior Consultant / Trainer
- Themengebiete
 - ▶ Open Source Systems Management
 - ▶ Open Source Data Center Solutions



Vorstellung NETWAYS

- Firmengründung 1995
- Open Source seit 1997
- Nagios / Netsaint seit 1999
- GmbH seit 2001

- 36 festangestellte Mitarbeiter

- Spezialisierung in den Bereichen
Open Source Systems Management und
Open Source Datacenter Solutions

NETWAYS Konferenzen



Open Source Monitoring Conference 23. – 24. Oktober 2013

- Veranstalter der Open Source Monitoring Conference
- Teilnehmer: 145 (06) 220 (07) 250 (08) 260 (09) 250(10) 260 (11) 260 (12)
- 2 Tracks mit Vorträgen & Workshops



Open Source Data Center Conference 17. – 18. April 2013

- Veranstalter der Open Source Datacenter Conference
- Teilnehmer:
70 (09) 80 (10) 100 (11) 100 (12)
- 2 Tracks mit Vorträgen & Workshops

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IPMI

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SERVER

Was ist IPMI?

- Intelligent Platform Management Interface kurz IPMI
- Sammlung an Schnittstellen zur Hardware / Firmware
- Entwickelt von Intel, HP, NEC und Dell
 - ▶ Version 1.0 (1998)
 - ▶ Version 1.5 (2001)
 - ▶ Version 2.0 (2004)

Was ist IPMI?

■ Schnittstelle um Sensoren- und Bauteilstai auszulesen

```
root@icinga-debian:~# ipmitool -H _____ -U root -P _____ sdr get "System Temp"
Sensor ID           : System Temp (0x11)
Entity ID           : 7.1 (System Board)
Sensor Type (Analog) : Temperature
Sensor Reading      : 26 (+/- 0) degrees C
Status              : ok
Nominal Reading     : 45.000
Normal Minimum      : -4.000
Normal Maximum      : 74.000
Upper non-recoverable : 90.000
Upper critical      : 85.000
Upper non-critical   : 80.000
Lower non-recoverable : -9.000
Lower critical       : -7.000
Lower non-critical   : -5.000
Positive Hysteresis  : 2.000
Negative Hysteresis  : 2.000
Minimum sensor range : Unspecified
Maximum sensor range : Unspecified
Event Message Control : Per-threshold
Readable Thresholds  : lnr lcr lnc unc ucr unr
Settable Thresholds  : lnr lcr lnc unc ucr unr
Threshold Read Mask   : lnr lcr lnc unc ucr unr
Assertion Events      :
Assertions Enabled    : unc+ ucr+ unr+
Deassertions Enabled  : unc+ ucr+ unr+
```

Was ist IPMI?


- Monitoringtool
 - ▶ Sensoren, Netzteile, Lüfter, Chassis, CPU, DIMM etc.
- Managementtool
 - ▶ Power on / Power off / Reset
- Inventarisierung
 - ▶ Seriennummer, Teilenummer etc.

Wie funktioniert IPMI?

- Zugriff via Seriell oder Netzwerk auf BMC (Baseboard Management Controller)
- Abfrage der verschiedenen Managementbusse, Sensoren, FRU etc.
- Zugriff via Berechtigungsmodell (Benutzer / Passwort / Berechtigungsstufe)

Wie funktioniert IPMI?

- Zugriff via Weboberfläche

	System Temp	Normal	26 degrees C
	Peripheral Temp	Normal	36 degrees C

- Zugriff via Commandline (ipmitool, freeipmi-tools uvm.)

```
# ipmitool -H server-ip -U user -P password sensor
```

...

```
System Temp | 26.000 | degrees C | ...
```

```
Peripheral Temp | 36.000 | degrees C | ...
```

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Comandline ipmitool

```
# apt-get install ipmitool (Debian)
# ipmitool -H server-ip -U user -P password sdr
CPU1 Temp      | 0 unspecified   | ok
CPU2 Temp      | 0 unspecified   | ok
System Temp    | 26 degrees C   | ok
Peripheral Temp | 35 degrees C   | ok
PCH Temp       | 43 degrees C   | ok
FAN1           | 3150 RPM        | ok
FAN2           | 3150 RPM        | ok
VTT            | 1.04 Volts      | ok
CPU1 Vcore     | 0.80 Volts      | ok
CPU2 Vcore     | 0.78 Volts      | ok
+1.1 V         | 1.10 Volts      | ok
+1.5 V         | 1.49 Volts      | ok
...
```

Comandline ipmitool

```
# ipmitool -H server-ip -U user -P password sdr get "FAN3"
```

```
Sensor ID          : FAN3 (0x43)  
Entity ID          : 29.3 (Fan Device)  
Sensor Type (Analog) : Fan  
Sensor Reading     : 3375 (+/- 0) RPM  
Status             : ok  
Nominal Reading    : 9600.000  
Normal Minimum     : 1500.000  
Normal Maximum     : 12750.000  
Upper non-recoverable : 19125.000  
Upper critical     : 19050.000  
Upper non-critical  : 18975.000  
...
```


Commandlinetool ipmitool

■ Comandline ipmitool

```
# ipmitool -H server-ip -U user -P password power  
chassis power Commands: status, on, off, cycle, reset, diag, soft
```

```
# ipmitool -H server-ip -U user -P password power status  
Chassis Power is on
```

Commandlinetool FreeIPMI

■ Comandline FreeIPMI

```
# apt-get install freeipmi-tools
```

```
# ipmi-sensors -h server-ip -u user -p password
```

```
Caching SDR repository information: /root/.freeipmi/sdr-cache/sdr-cache-icinga-demo.10.10.4.72
```

```
Caching SDR record 32 of 32 (current record ID 2416)
```

```
4: CPU1 Temp (OEM Reserved): [OEM State = 0000h]
```

```
71: CPU2 Temp (OEM Reserved): [OEM State = 0000h]
```

```
138: System Temp (Temperature): 27.00 C (-7.00/85.00): [OK]
```

```
205: Peripheral Temp (Temperature): 36.00 C (-7.00/85.00): [OK]
```

```
272: PCH Temp (Temperature): 43.00 C (-8.00/95.00): [OK]
```

```
...
```



IPMI in Icinga



Plugin

- Überwachung in Icinga durch Plugin
- Plugin = ausführbares Programm / Skript
 - ▶ Status und Output
 - ▶ Parametrisierbar
 - ▶ Schwellwerte

Plugin check_ipmi_sensor

- Überwachung mittels check_ipmi_sensor
 - ▶ freeipmi-tools – ipmimonitoring
 - ▶ Perl IPC::Run
- <http://www.thomas-krenn.com/de/oss/ipmi-plugin.html>

IPMI mit Icinga

```
# ./check_ipmi_sensor -H server-ip -U user -P password -L user
IPMI Status: Critical [Chassis Intru = Critical] | 'System Temp'=26.000000
'Peripheral Temp'=35.000000 'PCH Temp'=43.000000 'FAN1'=3075.000000
'FAN2'=3150.000000 'FAN3'=3225.000000 'VTT'=1.040000 'CPU1
Vcore'=0.720000 'CPU2 Vcore'=0.720000 'VDIMM AB'=1.504000 'VDIMM
CD'=1.520000 'VDIMM EF'=1.520000 'VDIMM GH'=1.520000 '+1.1 V'=1.104000
'+1.5 V'=1.488000 '3.3V'=3.312000 '+3.3VSB'=3.360000 '5V'=5.056000
'+5VSB'=5.056000 '12V'=12.084000 'VBAT'=3.216000
```

IPMI mit Icinga

```
# ./check_ipmi_sensor -H server-ip -U user -P password -L user -T power_supply
```

```
Sensor Type(s) power_supply Status: OK
```

```
# ./check_ipmi_sensor -H server-ip -U user -P password -L user -T temperature  
Sensor Type(s) temperature Status: OK | 'System Temp'=26.000000 'Peripheral  
Temp'=35.000000 'PCH Temp'=43.000000
```

IPMI in Icinga

- IPMI Schnittstelle als Host definieren
- Services für Abfragen definieren

```
define host {
    host_name server-hw
    address 192.168.1.127
    alias server-hw.netways.de
}

define service {
    host_name server-hw
    service_description hardware
    check_command check_ipmi_sensor
}
```


IPMI in Icinga

■ Command definieren

```
define command {  
    command_name check_ipmi_sensor  
    command_line $USER1$/check_ipmi_sensor -H $HOSTADDRESS$ -U  
$USER14$ -P $USER15$ -L user $ARG1$  
}
```

IPMI in Icinga

■ Icinga-Web Ansicht

The screenshot shows the Icinga Web interface. At the top, there are summary statistics for hosts and services. Below that, there are navigation tabs and a table of services for the host 'server-hw'.

Summary Statistics:

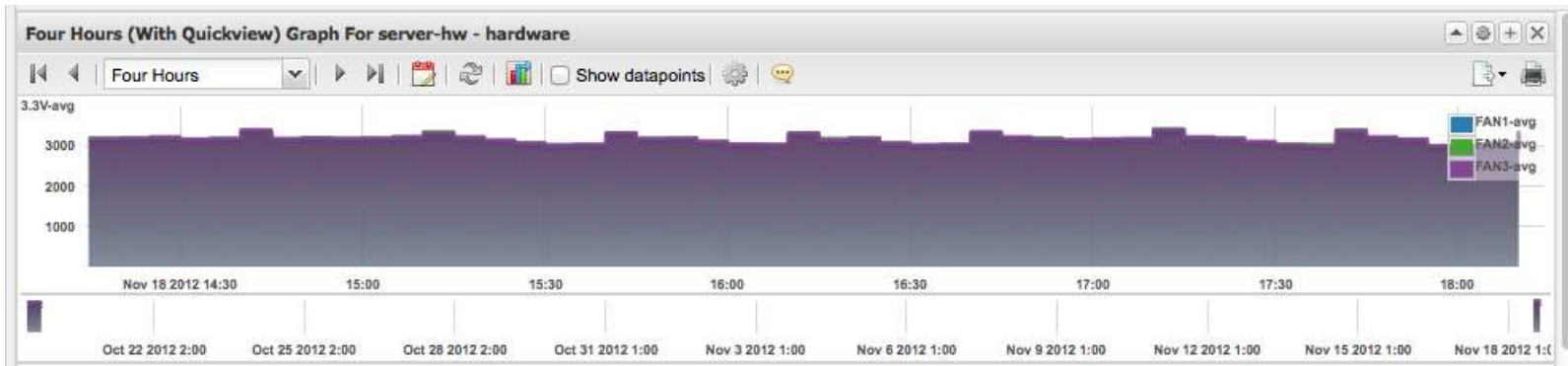
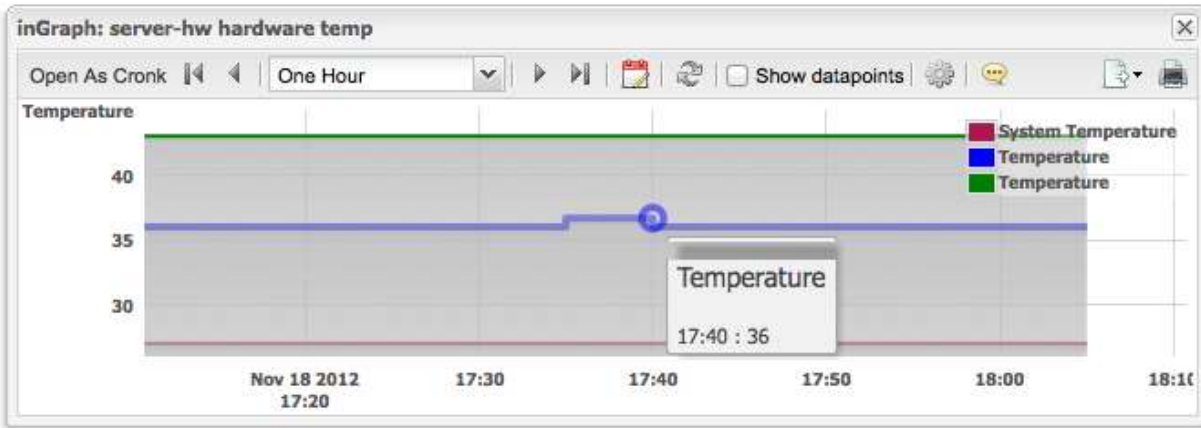
- 2 / 0 / 0 UP
- 0 / 0 / 0 DOWN
- 0 / 0 / 0 UNREACHABLE
- 0 PENDING
- 0 / 2 IN TOTAL
- 1 OK
- 10 / 0 OK
- 0 / 0 / 0 WARNING
- 1 / 0 / 0 CRITICAL
- 0 / 0 / 0 UNKNOWN
- 0 PENDING
- 1 / 11 IN TOTAL
- 0 DOWN

Service Table for Host: server-hw (2 Items):

Service	Status	Output
hardware	CRITICAL	IPMI Status: Critical [Chassis Intru = Critical]
hardware temp	OK	Sensor Type(s) temperature Status: OK

IPMI in Icinga

■ IPMI in inGraph



IPMI in Icinga

■ IPMI in Icinga-Classic

```

Current Status:      OK (for 0d 9h 11m 55s)
Status Information:  IPMI Status: OK
                    System Temp = 29.00 (Status: Nominal)
                    Peripheral Temp = 37.00 (Status: Nominal)
                    CPU Temp = 'Low' (Status: Nominal)
                    FAN 1 = 1725.00 (Status: Nominal)
                    Vcore = 0.87 (Status: Nominal)
                    3.3VCC = 3.36 (Status: Nominal)
                    12V = 11.93 (Status: Nominal)
                    VDIMM = 1.53 (Status: Nominal)
                    5VCC = 5.09 (Status: Nominal)
                    -12V = -12.09 (Status: Nominal)
                    VBAT = 3.12 (Status: Nominal)
                    VSB = 3.34 (Status: Nominal)
                    AVCC = 3.38 (Status: Nominal)
                    Chassis Intru = 'OK' (Status: Nominal)
                    PS Status = 'Presence detected' (Status: Nominal)
Performance Data:   'System Temp'=29.00 'Peripheral Temp'=37.00 'FAN 1'=1725.00 'Vcore'=0.87 '3.3VCC'=3.36 '12V'=11.93 'VDIMM'=1.53 '5VCC'=5.09 '-12V'=-12.09 'VBAT'=3.12
                    'VSB'=3.34 'AVCC'=3.38
    
```



Fragen und Antworten





Fragen und Antworten

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