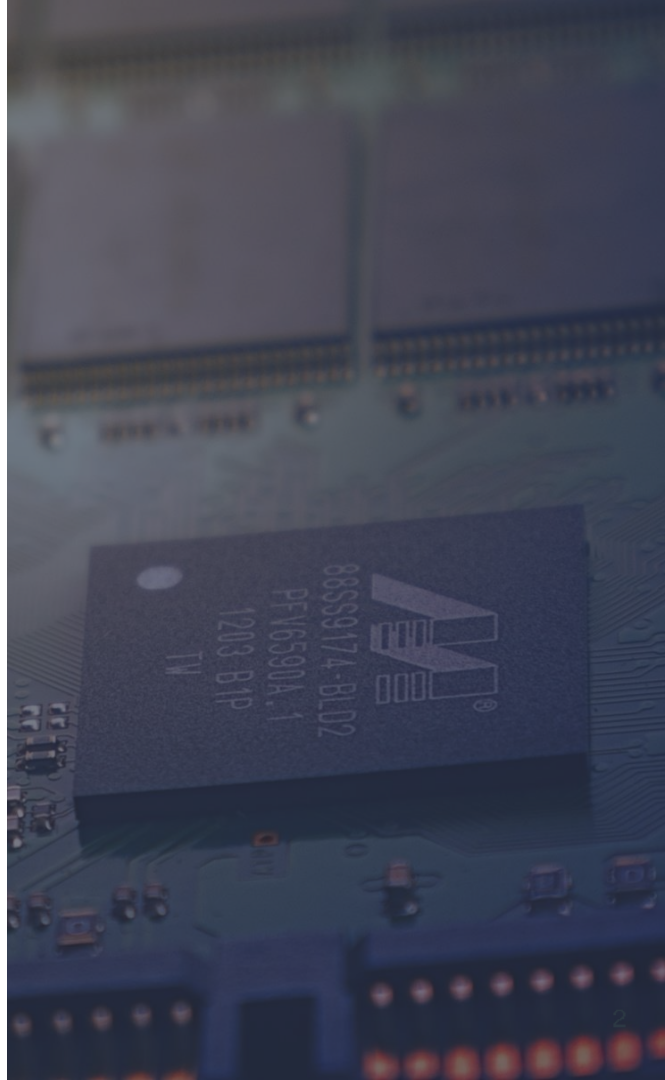


Monitoring mit Checkmk

LINUX STAMMTISCH MÜNCHEN

Agenda

1. EINFÜHRUNG
2. DEMO
3. ZUSAMMENFASSUNG
4. FRAGEN UND ANTWORTEN





ÜBER MICH

Marcel Schulte

- Consultant bei tribe29 seit 2016, der Firma hinter Checkmk
- Über die Checkmk-Mailingliste bei tribe29 gelandet
- 20+ Jahre IT
- 10+ Jahre Monitoring

Wer seid ihr?

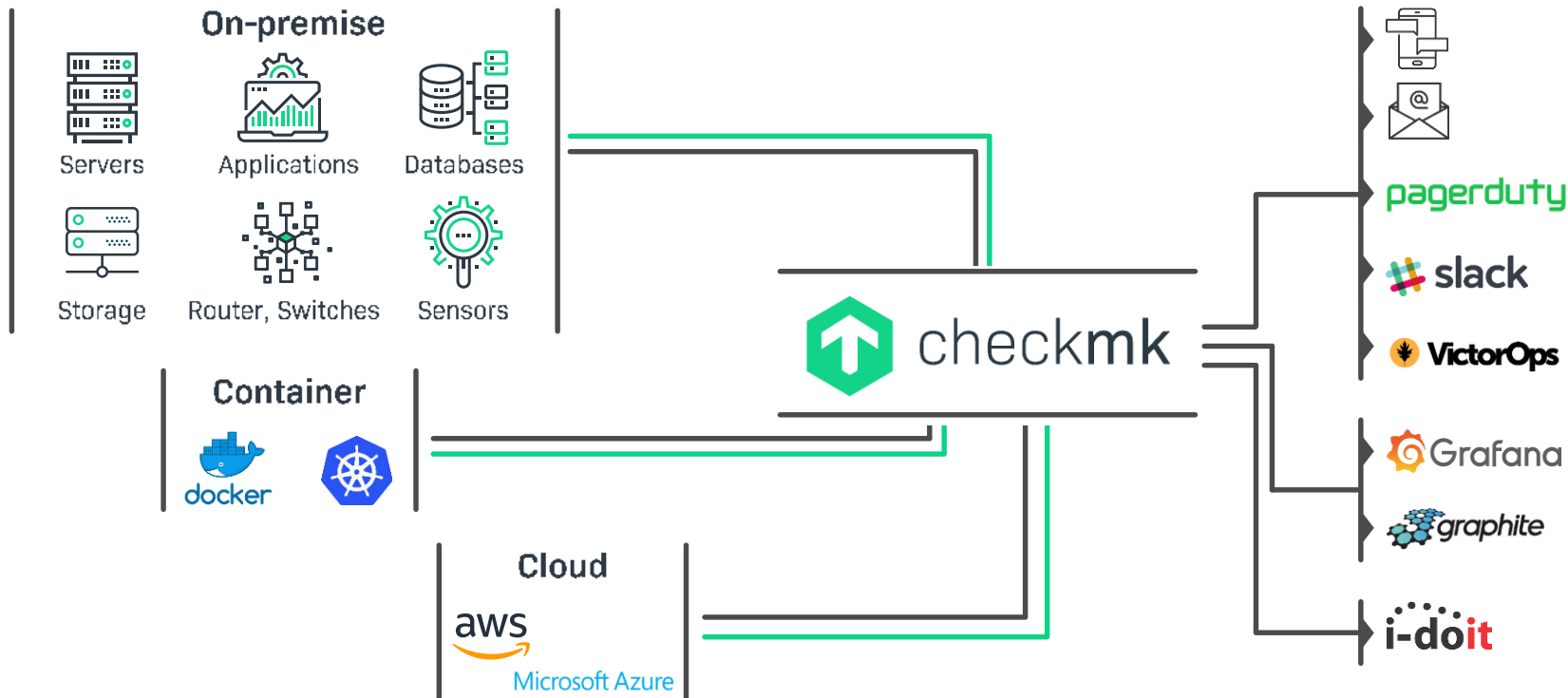
- Wer hat Erfahrung mit Monitoring?
- Wer nutzt bereits Checkmk?
- Was würdet ihr gerne heute erfahren?

Wieso brauche ich das?

- “Aber in meinem System gibt es doch keine Fehler”
- Software oder Hardware ist fehleranfällig –
irgendetwas ist schon oder geht immer kaputt
- Lieber proaktiv sein vs. Anrufe von Nutzern zu bekommen
- Man spart sich Geld, indem man das richtige Problem behebt – 5€ Patch-Kabel < Server upgrade



Checkmk: A complete IT monitoring solution



Servermonitoring

Services of Host windows-hyperv

33 rows cmkadmin (admin) 10:11

STATE	SERVICE	ICONS	STATUS DETAIL	AGE	CHECKED	PERF-O-METER
CRIT	System Time		CRIT - Offset is -149059285 sec (warn/crit at 30/60 sec)	2017-10-10 09:12:06	5 m	-4.7 y
WARN	Filesystem C:/ClusterStorage/ds01/		WARN - 80.4% used (402.05 of 499.94 GB), (warn/crit at 80.00/90.00%), trend: 0.00 B / 24 hours	2017-10-10 09:12:06	5 m	80.4%
OK	Check_MK		OK - [agent] Version: 1.2.5i1, OS: windows, execution time 0.1 sec	2017-10-10 09:12:06	5 m	50.0 ms
OK	Check_MK Discovery		OK - no unmonitored services found, no vanished services found	2017-10-10 09:12:06	46 m	
OK	Bonding Interface 10GTeam		OK - mode: HyperVPort, Speed:20 Gbps, NIC2/b8:ca:3a:fa:d0:b8 up, NIC1/b8:ca:3a:fa:d0:b8 up, bond status: up	2017-10-10 09:12:06	5 m	
OK	Filesystem C:/		OK - 46.9% used (255.02 of 544.12 GB), trend: 0.00 B / 24 hours	2017-10-10 09:12:06	5 m	46.9%
OK	Filesystem C:/ClusterStorage/ds03/		OK - 56.3% used (281.26 of 499.94 GB), trend: 0.00 B / 24 hours	2017-10-10 09:12:06	5 m	56.3%
OK	Filesystem C:/ClusterStorage/ds04/		OK - 65.0% used (325.10 of 499.94 GB), trend: 0.00 B / 24 hours	2017-10-10 09:12:06	5 m	65%
OK	Filesystem C:/ClusterStorage/snapinfo/		OK - 6.0% used (59.88 of 994.58 MB), trend: 0.00 B / 24 hours	2017-10-10 09:12:06	5 m	6%
OK	Interface 1		OK - [Broadcom BCM57800 NetXtreme II 10 GiGE [NDIS VBD Client] 136] (Connected) 1.41 Gbit/s, in: 0.00 B/s(0.0%), out: 0.00 B/s(0.0%)	2017-10-10 09:12:06	5 m	0.0% 0.0%
OK	Interface 2		OK - [Broadcom BCM57800 NetXtreme II 10 GiGE [NDIS VBD Client] 135] (Connected) 1.41 Gbit/s, in: 0.00 B/s(0.0%), out: 0.00 B/s(0.0%)	2017-10-10 09:12:06	5 m	0.0% 0.0%
OK	Interface 3		OK - [isatap.{2EA12A36-B518-4031-B9CC-E1A3623E5A92}] (Connected) 100.0 Kbit/s, in: 0.00 B/s(0.0%), out: 0.00 B/s(0.0%)	2017-10-10 09:12:06	5 m	0.0% 0.0%
OK	Interface 4		OK - [isatap.{0D54898F-F28D-421D-AA4E-98940CA88651}] (Connected) 100.0 Kbit/s, in: 0.00 B/s(0.0%), out: 0.00 B/s(0.0%)	2017-10-10 09:12:06	5 m	0.0% 0.0%
OK	Interface 5		OK - [isatap.{FB1996CD-4E53-4783-B636-C03AD30A88FD}] (Connected) 100.0 Kbit/s, in: 0.00 B/s(0.0%), out: 0.00 B/s(0.0%)	2017-10-10 09:12:06	5 m	0.0% 0.0%
OK	Interface 6		OK - [isatap.{A9110B17-C3A7-4C16-9FD1-7EAA9191D51A}] (Connected) 100.0 Kbit/s, in: 0.00 B/s(0.0%), out: 0.00 B/s(0.0%)	2017-10-10 09:12:06	5 m	0.0% 0.0%

Beispielmetriken

- CPU load
- Memory
- Filesystems
- Mounts
- Interfaces
- Jobs
- Logs
- und vieles mehr für fast alle Betriebssysteme

Netzwerkmonitoring

Network interfaces

27 rows mh (admin) 13:49

INDEX	DESCRIPTION	ALIAS	STATUS	ADMIN	USED	SPEED	LAST CHANGE	PHYSICAL ADDRESS (MAC)	TYPE	VLAN	VLAN TYPE
1	port 1: Gigabit Copper		up	up	used	1 Gbits	11 days ago		6 - ethernetCsmacd		
2	port 2: Gigabit Copper	ESX	down	up	free		470 days ago		6 - ethernetCsmacd		
3	port 3: Gigabit Copper		down	down	used		20 days ago		6 - ethernetCsmacd		
4	port 4: Gigabit Copper	Fritzbox wlan	up	up	used	1 Gbits	393 days ago		6 - ethernetCsmacd		
5	port 5: Gigabit Copper	LP Sales	up	up	used	1 Gbits	4 days ago		6 - ethernetCsmacd		
6	port 6: Gigabit Copper		up	up	used	1 Gbits	20 days ago		6 - ethernetCsmacd		
7	port 7: Gigabit Copper		down	up	used		20 days ago		6 - ethernetCsmacd		
8	port 8: Gigabit Copper	2.10	down	up	free		400 days ago		6 - ethernetCsmacd		
9	port 9: Gigabit Copper		down	up	free		470 days ago		6 - ethernetCsmacd		
10	port 10: Gigabit Copper	2.11	down	up	used		yesterday		6 - ethernetCsmacd		
11	port 11: Gigabit Copper		down	up	used		20 days ago		6 - ethernetCsmacd		
12	port 12: Gigabit Copper		down	up	used		20 days ago		6 - ethernetCsmacd		
13	port 13: Gigabit Copper		down	up	free		459 days ago		6 - ethernetCsmacd		
14	port 14: Gigabit Copper		down	up	free		488 days ago		6 - ethernetCsmacd		
15	port 15: Gigabit Copper		down	up	free		492 days ago		6 - ethernetCsmacd		
16	port 16: Gigabit Copper	Raspi	up	up	used	100 Mbits	492 days ago		6 - ethernetCsmacd		

Unterstützte Geräte

- Cisco
- Brocade
- Huawei
- Juniper
- Extreme Networks
- TP-Link
- Palo Alto Networks
- Netgear
- Checkpoint
- und viele, viele mehr

Applikationsmonitoring

Services of Host server-windows-msexch-3

OK	Exchange Replication Health ServerLocatorService	≡	OK - Test Passed
OK	Exchange Replication Health TasksRpcListener	≡	OK - Test Passed
OK	Exchange Replication Health TcpListener	≡	OK - Test Passed
OK	Exchange DAG ContentIndex of ABQ-AQXDB-01	≡	OK - Healthy
OK	Exchange DAG ContentIndex of NCQ-MSXDB-01	≡	OK - Healthy
OK	Exchange DAG CopyQueue of ABQ-AQXDB-01	≡	OK - Queue length is 0
OK	Exchange DAG CopyQueue of NCQ-MSXDB-01	≡	OK - Queue length is 0
OK	Task WOE Clear Exchange Log Files	≡	OK - Service Status: operation completed successfully (0x0), Last run time: 21.06.2017 20:00:00, Next run time
OK	Interface MAPLE-NET	≡	OK - Teaming Status (up), Members: [7 (Connected), 2 (Connected)] 20.00 Gbit/s
OK	Interface DUMMY-NET	≡	OK - Teaming Status (up), Members: [8 (Connected), 3 (Connected)] 20.00 Gbit/s
OK	Queue Active Mailbox Delivery	≡	OK - 0 entries
OK	Queue Active Remote Delivery	≡	OK - 0 entries
OK	Queue Retry Remote Delivery	≡	OK - 0 entries
OK	Queue Poison Queue Length	≡	OK - 0 entries
OK	Filesystem C:/	≡	OK - 43.8% used (195.27 of 446.11 GB), trend: 0.00 B / 24 hours
OK	Filesystem D:/	≡	OK - 2.92% used (979.23 GB of 32.74 TB), trend: 0.00 B / 24 hours
OK	File C:\Windows\Memory.DMP	≡	OK - Size: 0 B, Age: 902 days

Unterstützte Applikationen

- Apache, nginx, Haproxy
- Postfix, gmail, nullmailer, MS Exchange
- Elasticsearch, Splunk, Jenkins, MS Office, SAP, Citrix, ActiveMQ
- McAfee, Kaspersky, pfSense, Stormshield
- JVM
- und viele mehr

Datenbankmonitoring

Services of Host server-linux-oracle-17

407 rows cmkadmin (admin) 14:55

OK	ORA MANON TEMP Tablespace		(5.00 GB of max. 5.00 GB). Free: 0.00 B, 0 increments (0.00 B)	2017-10-10 09:12:11	6 m	5.00 GB
OK	ORA MAE.UNDOTBS1 Tablespace		OK - ONLINE (UNDO). Size: 5.00 GB, 0.73% used (37.50 MB of max. 5.00 GB). Free: 4.96 GB, 0 increments (0.00 B)	2017-10-10 09:12:11	6 m	37.50 MB
OK	ORA MAE.USERS Tablespace		OK - ONLINE (PERMANENT). Size: 50.00 MB, 0.238% used (2.44 MB of max. 1.00 GB). Free: 1021.56 MB, 974 increments (974.00 MB)	2017-10-10 09:12:11	6 m	2.44 MB
WARN	ORA MANON Instance		WARN - Database Name MANON, Status OPEN, Role PRIMARY, Version 11.2.0.4.0, Up since 2018-06-30 15:21:45 (274 days), Logins allowed, Log Mode archive-log, Force Logging no WARN	2017-10-10 09:12:11	6 m	275 d
OK	ORA MANON Locks		OK - No locks existing	2017-10-10 09:12:11	6 m	
OK	ORA MANON Logswitches		OK - 0 log switches in the last 60 minutes (warn/crit below -1/-1) (warn/crit at 50/100)	2017-10-10 09:12:11	6 m	0
OK	ORA MANON Long Active Sessions		OK - 0 long active sessions (0, warn/crit at 500/1000)	2017-10-10 09:12:11	6 m	
OK	ORA MANON Performance		OK - Buffer hit ratio: 95.8%, Library cache hit ratio: 59.8%, DB time: 0.0/s, DB CPU: 0.0/s	2017-10-10 09:22:11	6 m	0/s
OK	ORA MANON Processes		OK - 40 of 300 processes are used (13%, warn/crit at 70%/90%)	2017-10-10 09:12:11	6 m	40
OK	ORA MANON Recovery Area		OK - 36.00 MB out of 120.00 GB used (0.0%, warn/crit at 70.0%/90.0%), 0.00 B reclaimable	2017-10-10 09:12:11	6 m	36.00 MB
OK	ORA MANON Recovery Status		OK - primary database, oldest Checkpoint 5 hours 8 min ago	2017-10-10 09:12:11	6 m	308 m / 0.00 s
WARN	ORA MANON Sessions		WARN - 54 sessions (warn/crit at 50/100) WARN	2017-10-10 09:12:11	6 m	54
OK	ORA MANON Undo Retention		OK - 33 min Undo retention (warn/crit at 10 min/5 min), 260 active undoblocks, 0 max concurrent transactions, 22 min max querylen, 0 space errors	2017-10-10 09:12:11	6 m	
OK	ORA MANON ARCHIVELOG RMAN Backup		OK - Last backup 5 hours 3 min ago	2017-10-10 09:12:11	6 m	303 m
OK	ORA MANON AUDIT_DATA Tablespace		OK - ONLINE (PERMANENT). Size: 1.00 GB, 2.85% used (233.56 MB of max. 8.00 GB). Free: 7.77 GB, 56 increments (7.00 GB)	2017-10-10 09:12:11	6 m	233.56 MB
OK	ORA MANON CONTROLFILE RMAN Backup		OK - Last backup 5 hours 3 min ago	2017-10-10 09:12:11	6 m	303 m

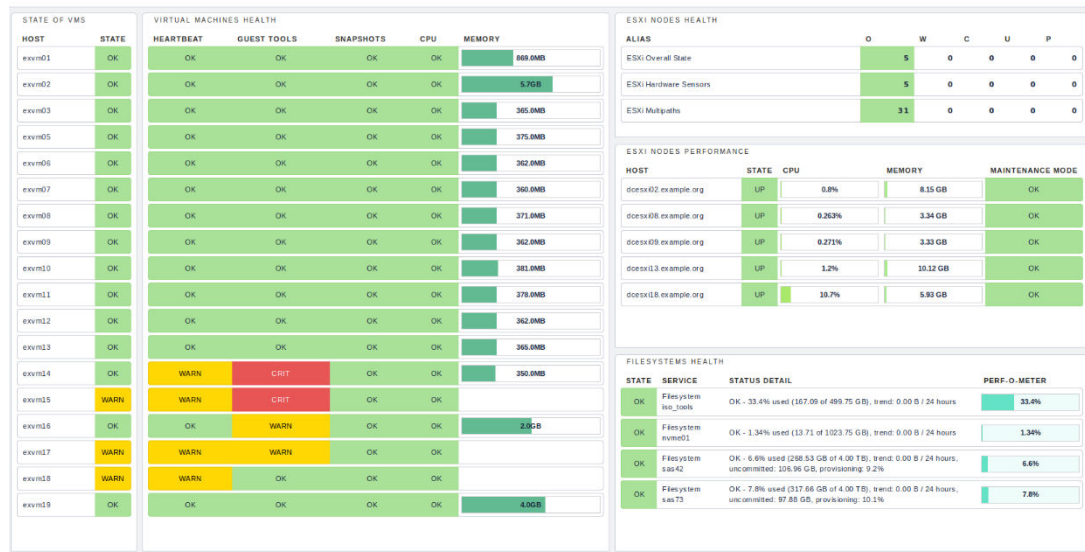
Unterstützte Datenbanken

- Oracle (screenshot)
- MySQL
- MS SQL
- PostgreSQL
- MongoDB
- IBM DB2
- MS Azure SQL
- AWS RDS
- und noch ein paar

Cloud- und Containermonitoring

vSphere Dashboard - Level 1

cmkadmin (admin) 16:08



Unterstützte Systeme

- AWS
- Azure
- Docker
- Kubernetes
- vSphere
- Hyperv

DAS TEAM

Mehr als 35 Leute arbeiten an Checkmk



Management & Team



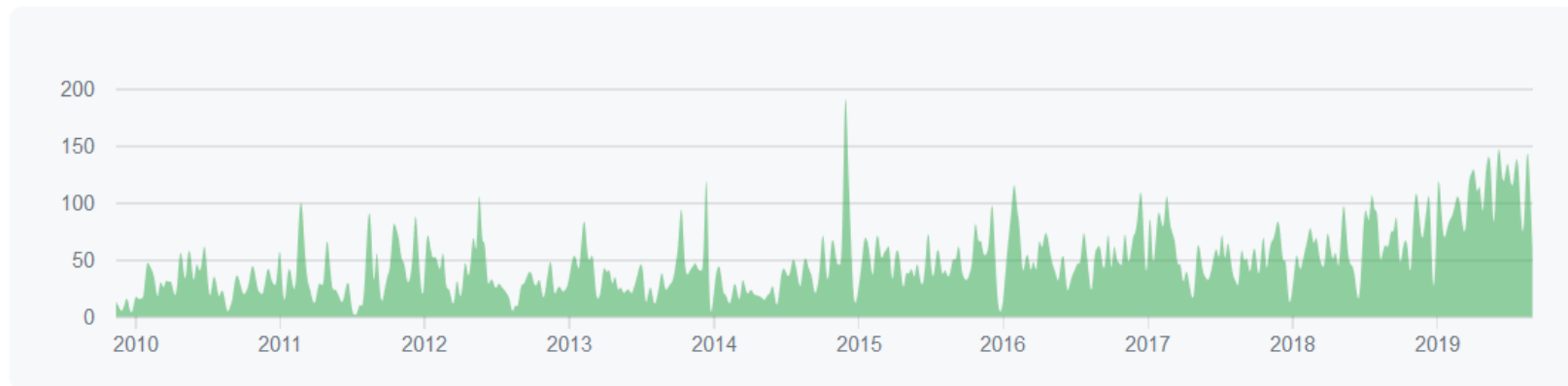
Aktuell 36 Mitarbeiter

Computer Scientists, Mathematicians, Engineers, Chemists, Physicists, Sys-Admins, Philosophers,
and many more...

OPEN-SOURCE

Aktive Pflege & Transparenz

Contributions to master, excluding merge commits



Mehr als 100 Commits pro Woche, 500,000+ Zeilen Code, größtenteils in Python

<https://github.com/tribe29/checkmk>

Unternehmen weltweit nutzen Checkmk



1800 Customers



35% of Dax 30



35+ Countries



97% renew every year

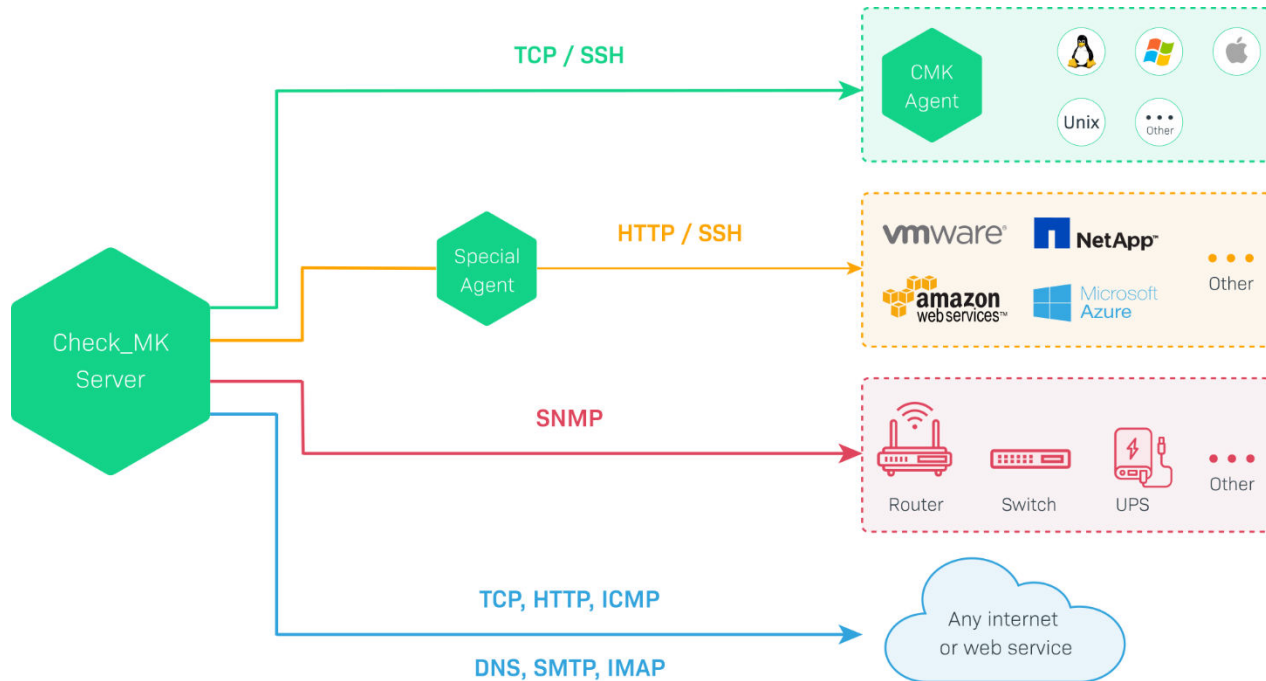
Checkmk Basics

DEMO

Ablauf

- Installation Checkmk Server (mein Laptop)
- Installation Agent auf Host (auch mein Laptop)
- „Host“ aufnehmen im Monitoring
(ich überwache mich selber!)
- Plug-Ins nutzen am Beispiel vom
Filesystem Check-Plugin
- Alarmierung: Benachrichtigung mit Regel erstellen

Wie Checkmk an Daten kommt



Fertig mit Folien → Es geht los!

Zusammenfassung

Checkmk hat eine Vielzahl an Funktionen



Service state
monitoring with
1700+ plug-ins



Log & event-based
monitoring



Dynamic **graphing** &
efficient **long-term**
storage



User-defined
dashboards



Reporting with
Availability & SLA
analysis



Management view:
Business Intelligence



Flexible **notifications**
und **alert handling**



Dynamic **hardware**
and
software inventory



Rule-based
configuration,
automatic **discovery**



Ultra-scalable,
high-performance
core

Neuigkeiten in Checkmk 1.6 (Release am ~24.9)



**Extended Docker &
Kubernetes monitoring**



**Extended AWS &
Azure monitoring**



**Monitoring dynamic
infrastructures & labels**



**Graphing
with Grafana**

Neuigkeiten in Checkmk 1.6 (Release am ~24.9)



Extended Docker & Kubernetes monitoring



Dark theme



Extended AWS & Azure monitoring



220 new monitoring checks



Monitoring dynamic infrastructures & labels



7 new integrations



Graphing with Grafana



Performance, Security, and all the other thousand things

Checkmk gibt es in drei verschiedenen Editionen

Raw Edition

For smaller IT infrastructures
and private users

Good performance,
based on the Nagios core

Complete monitoring system
with more than 1700 plug-ins

Community support

Free open-source version

Enterprise Edition

For professional use

Ultra-high performance
through the CMC Microcore

Extended enterprise
functionality

Vendor / Partner support

From **600€** / year

Managed Services Edition

For Managed Services
Providers

Ultra-high performance
through the CMC Microcore

Enterprise functionality
& a variety of functions for
Monitoring-as-a-Service

Vendor / Partner support

From **1.080€** / year

Support ist optional auch möglich



**Vendor / Partner
support**



**Break/Fix
support**



**Service Level
Agreements**



Credits



Consulting

Vendor support and service options are only available for
the Enterprise und Managed Services editions

Fragen?



ENDE

Links / Weiterführendes

- Download und mehr Infos zu Checkmk unter:
<https://checkmk.de>
- Kontakt:
 - Generelle Anfragen: info@checkmk.com
 - Produkt-Feedback: feedback@checkmk.com
 - GitHub: <https://github.com/tribe29>



Danke!

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