ENTERPRISE MONITORING TRANSFORMATION

ZABBIX SUMMIT 2025

Richard Germanus

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CANCOM at a glance

1992
FOUNDED

~80
LOCATIONS IN EUROPE

5,600+
EMPLOYEES

40,000+
CUSTOMERS

ZABBIX

CANCOM at a glance

200+
TECHNOLOGY PARTNER

Munich
HEADQUARTER

ZABBIX

Adobe · Apple · CISCO Partner · DELL Technologies TITANIUM PARTNER · hp · Hewlett Packard Enterprise · IBM Platinum Partner

Lenovo · Microsoft · NetApp · paloalto NETWORKS · TREND · vmware

CANCOM

THE ZABBIX JOURNEY

Let's dive in!

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CENTRAL MONITORING SOLUTION

CANCOM GROWTH

6 LEGACY SYSTEMS

CENTRAL SOLUTION

STRATEGIC DECISION

ZABBIX

initMAX
CANCOM'S ZABBIX VENDOR

250+
CUSTOMERS MONITORED BY ZABBIX

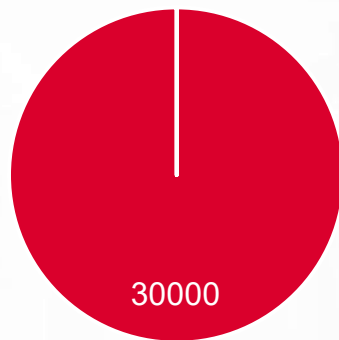## 30,000+
MONITORED HOSTS BY ZABBIX

MONITORED SCOPE

2023
MONITORED HOSTS BY

2025
MONITORED HOSTS BY

2023 pie chart values: 8020, 4595, 5050, 300, 3500, 5500

2025 pie chart value: 30000
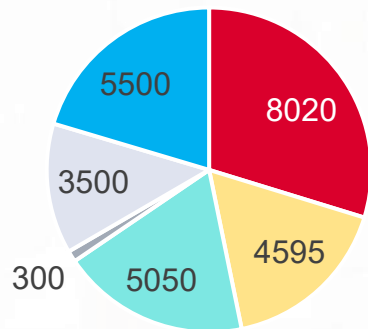
Legend:
- ZABBIX
- centreon
- nagios
- icinga1
- icinga2
- xymon

ZABBIX

3

MONITORED SCOPE

INTERESTING VALUES

30K+
MONITORED HOSTS

9.5K+
NVPS

1.8K+
TEMPLATES

2.8M+
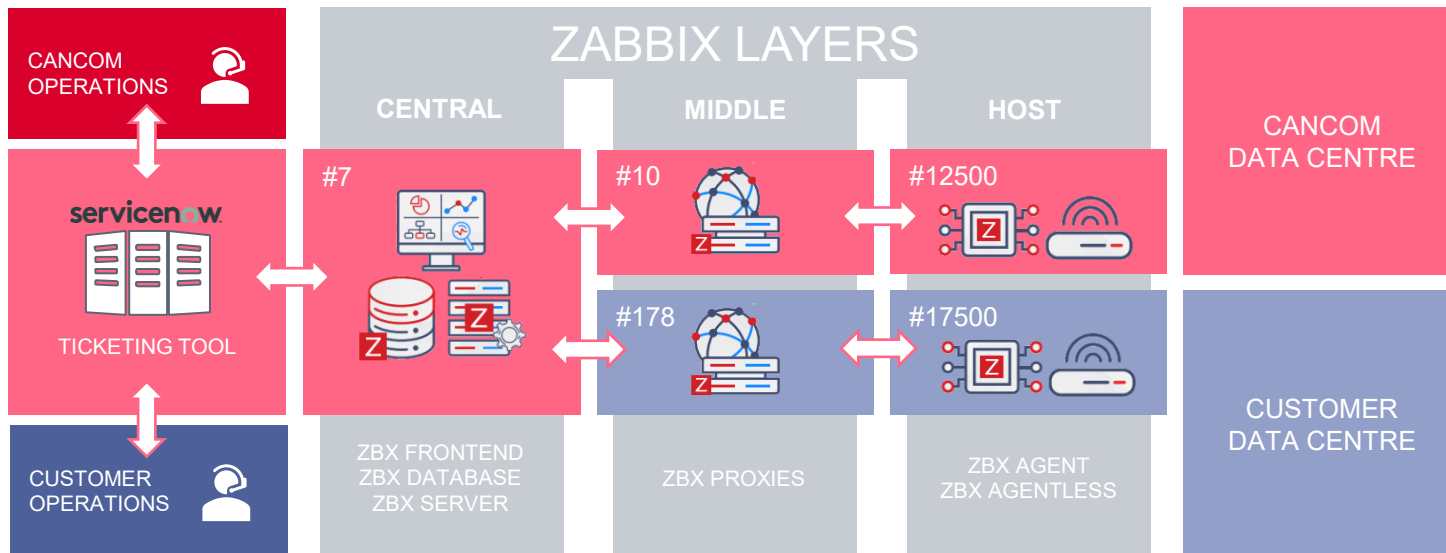MONITORED ITEMS

1.5M+
TRIGGERS

622
USERS

LANDSCAPE MANAGEMENT

ABSTRACT PLAN OF CRITICAL LANDSCAPE

LANDSCAPE MANAGEMENT

CAPACITY MANAGEMENT

DASHBOARD

SELF-MONITORING

LIFECYCLE MANAGEMENT

HW&SW LIFECYCLE

PLANNED RESTARTS

STANDARD CONFIGURATION & CATEGORIZATION

ORCHESTRATION

THE ZABBIX JOURNEY

PROJECT ZABBIX REBUILD
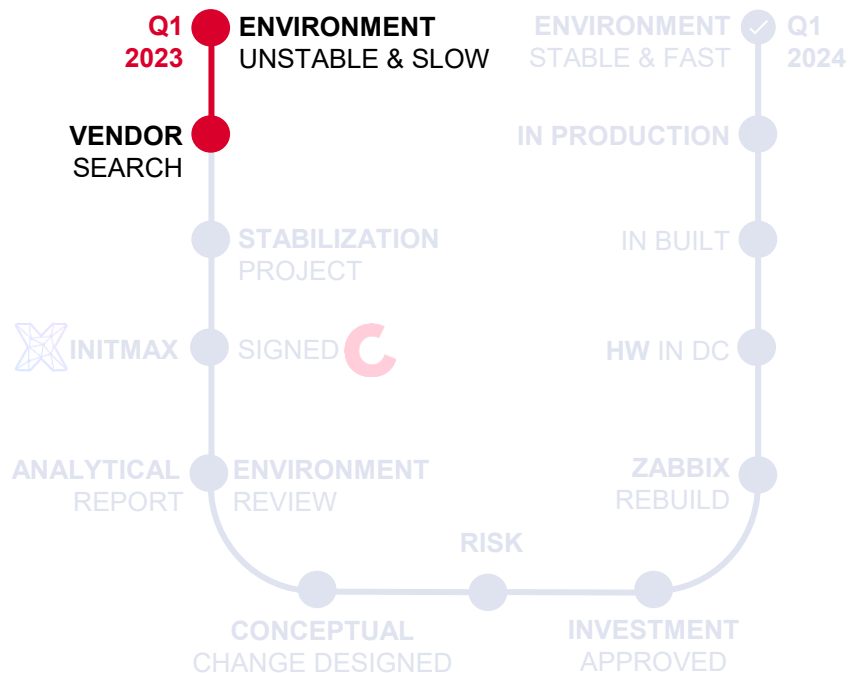
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PROJECT ZABBIX REBUILD

ZABBIX

TIMELINE
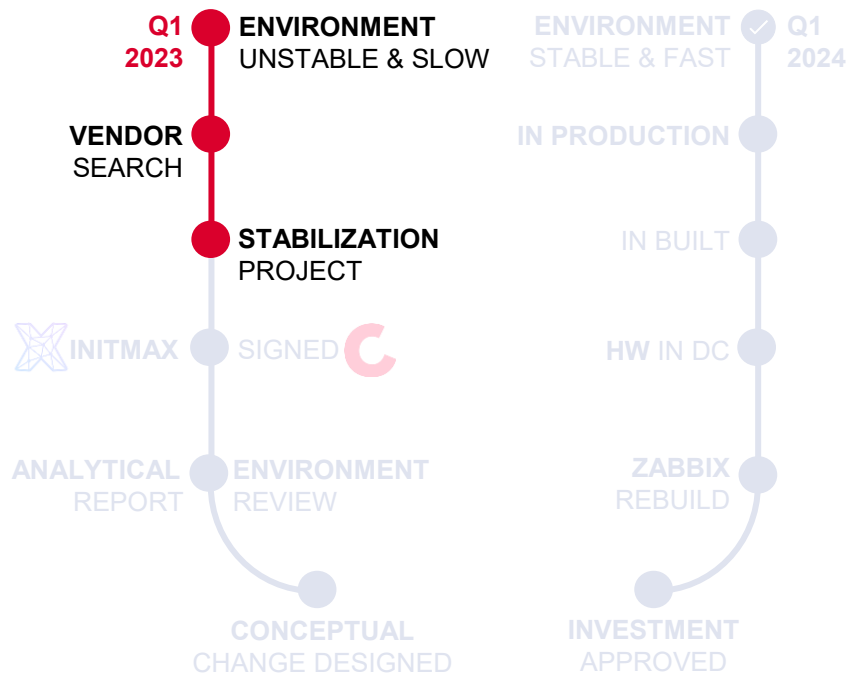

STATUS QUO - Q1 2023

- MONITORED HOSTS: 12000+
- VALUES PER SECOND: 9000+
- FRONT END - SLOW RESPONSE TIME
- OVERLOADED DATABASE
- UNEXPECTED OUTAGES

NEED OF

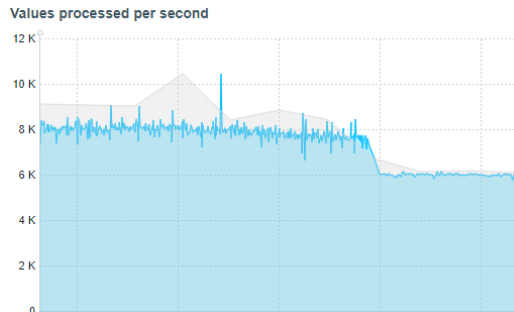- SCALABLE ENTERPRISE ENVIRONMENT
- PROFESSIONAL CONSULTANCY

PROJECT ZABBIX REBUILD

ZABBIX

TIMELINE

Q1 2023 ● ENVIRONMENT
UNSTABLE & SLOW

ENVIRONMENT ✓ Q1 2024
STABLE & FAST

VENDOR ● SEARCH

IN PRODUCTION

● **STABILIZATION**
PROJECT

IN BUILT

✕ INITMAX ● SIGNED ●

HW IN DC

ANALYTICAL ● ENVIRONMENT ●
REPORT REVIEW

ZABBIX ●
REBUILD

● CONCEPTUAL
CHANGE DESIGNED
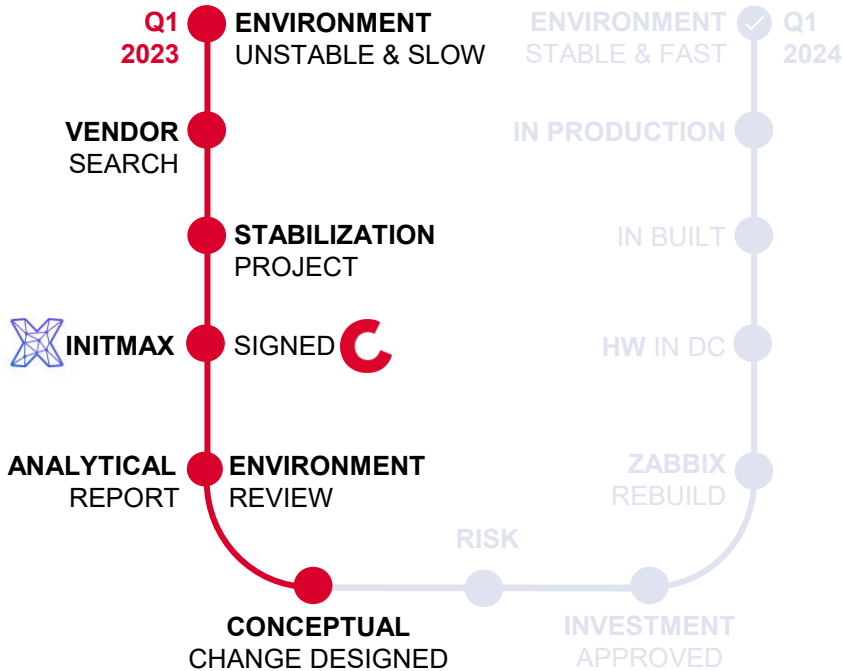
● INVESTMENT
APPROVED

STABILIZATION PROJECT

- FOCUS ON SAFEGUARDING & QUICK WINS

- PRIMARY DB – INCREASED CPU RESOURCES
- HISTORY CACHE FROM 4GB TO 10GB
- REPORTING – CLONE DB INSTEAD OF PRIMARY
- MOVE GRAYLOG TO ANOTHER ESX
- DATA COLLECTION INTERVAL
     1 minute → 3 minutes

Values processed per second

12 K
10 K
8 K
6 K
4 K
2 K
0

3

PROJECT ZABBIX REBUILD

ZABBIX

TIMELINE

Q1 2023 — **ENVIRONMENT** UNSTABLE & SLOW

VENDOR SEARCH

STABILIZATION PROJECT

INITMAX SIGNED

ANALYTICAL REPORT — **ENVIRONMENT** REVIEW

CONCEPTUAL CHANGE DESIGNED

ENVIRONMENT STABLE & FAST — Q1 2024

IN PRODUCTION

IN BUILT

HW IN DC

ZABBIX REBUILD

RISK

INVESTMENT APPROVED

INITMAX SIGNED – Q3 2023

- KICK OFF ONSITE WORKSHOP

CONCEPTUAL CHANGE

- HW RECOMMENDATIONS
  - PHYSICAL DB INSTEAD OF VIRTUAL
  - CPU WITH FOCUS ON POWER PER CORE
  - RAM IN SIZE OF WEEKLY DB DATA
  - HDD: NVME INSTEAD OF SHARED

- SW RECOMMENDATIONS
  - CONSOLIDATE ALL UNNECESSARY SW
    - HA PROXY
    - PG BOUNCER

3

PROJECT ZABBIX REBUILD LANDSCAPE DESIGN
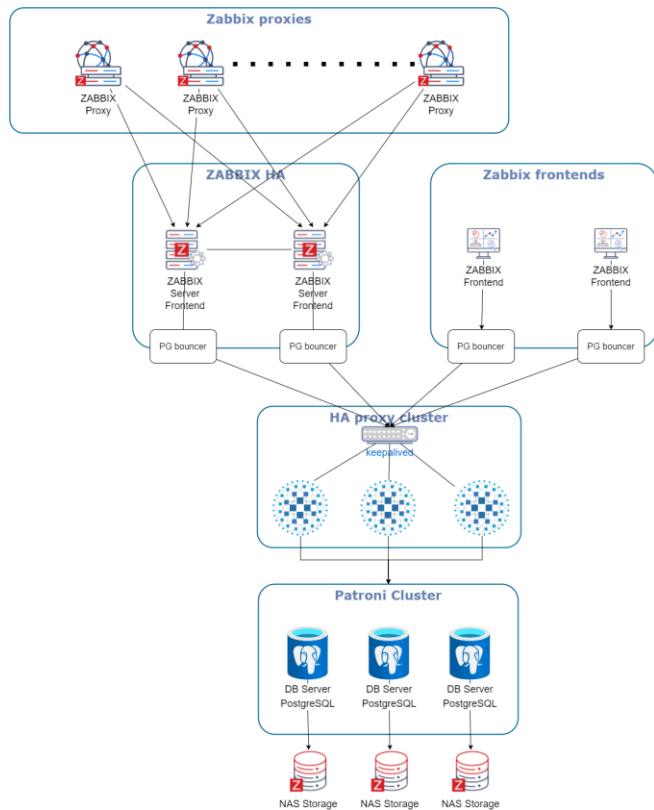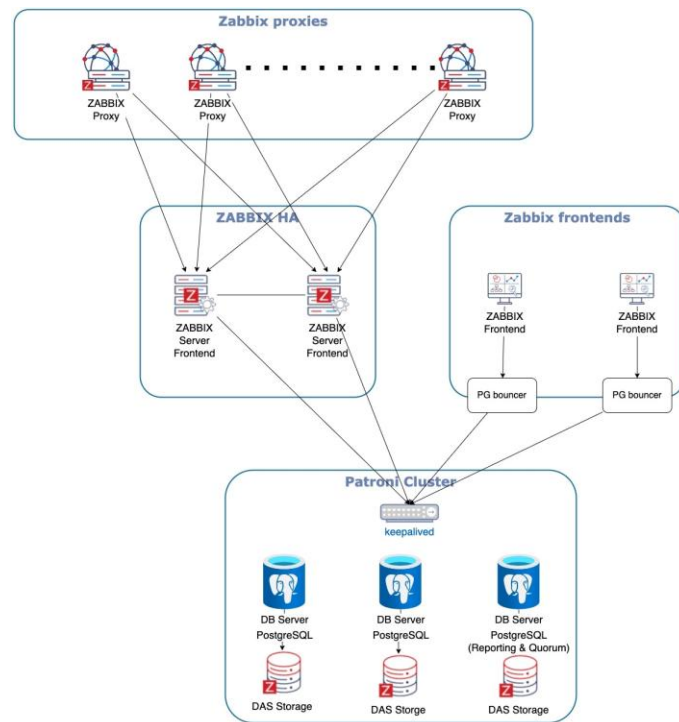
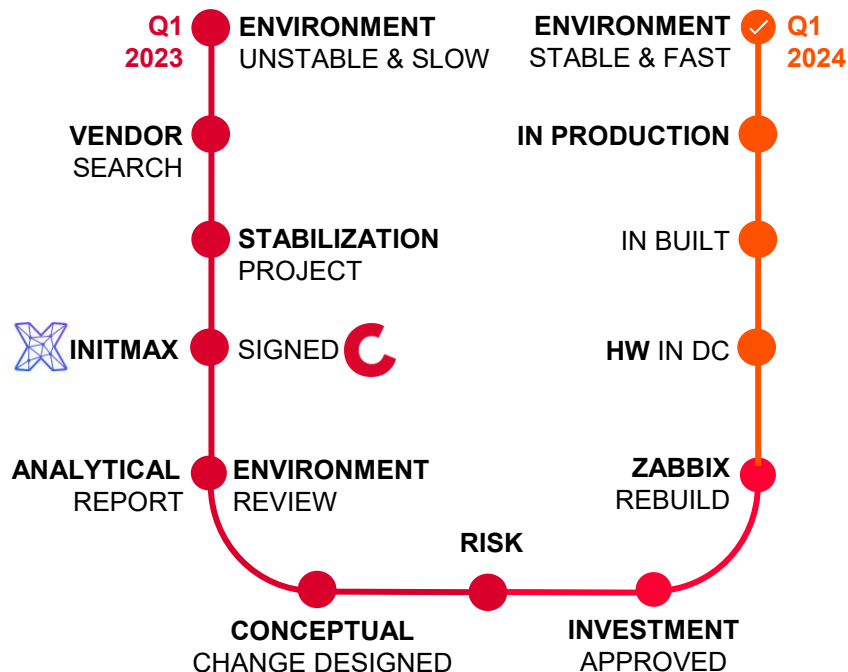# PROJECT ZABBIX REBUILD
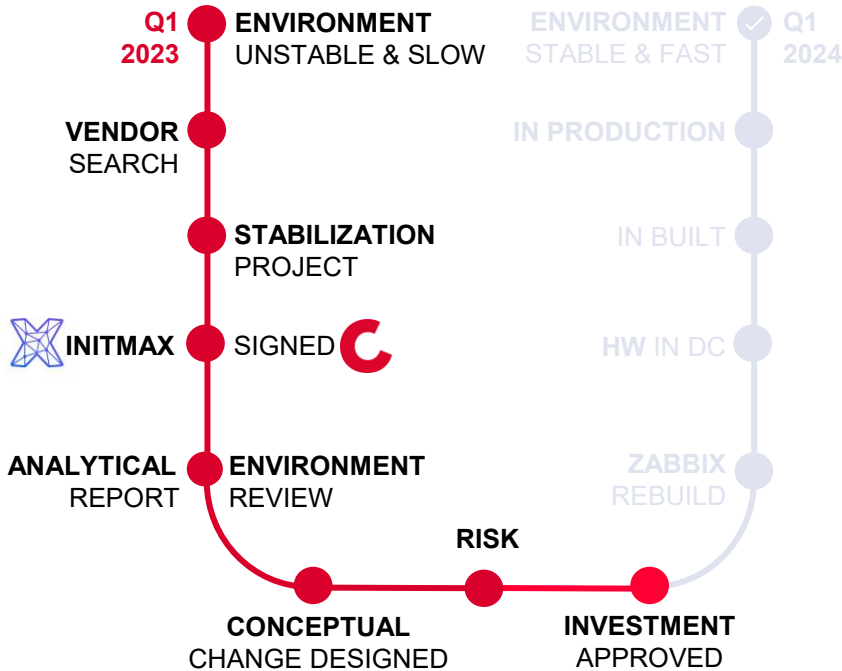
ZABBIX

TIMELINE

RISK

- CONTINOUS GROWTH OF MONITORED SCOPE

- CMO SETUP:
  - RISK OF DATA LOSS
  - MAXIMUM 19,000 MONITORED HOSTS

- FMO SETUP:
  - OPTIMIZED FOR 40,000 MONITORED HOSTS

INVESTMENT APPROVED

- APPROVED IN Q4 2023

PROJECT ZABBIX REBUILD

ZABBIX

TIMELINE

Q1 2023 ENVIRONMENT UNSTABLE & SLOW

ENVIRONMENT STABLE & FAST **Q1 2024**

VENDOR SEARCH

IN PRODUCTION

STABILIZATION PROJECT

IN BUILT

INITMAX SIGNED

HW IN DC

ANALYTICAL REPORT — ENVIRONMENT REVIEW

ZABBIX REBUILD

RISK

CONCEPTUAL CHANGE DESIGNED

INVESTMENT APPROVED

ZABBIX REBUILD

- PROJECT EXECUTED
- CLEANING & ENHANCEMENT

FMO IN PRODUCTION

- WITH THE FOLLOWING RESULTS

- **STABILITY & RELIABILITY**

- **DATABASE PERFORMANCE**

- **FRONTEND RESPONSE TIME**

  - FOR USER COMMON ACTIONS
  - FROM 60 SECONDS/TIMEOUT TO 6 SECONDS

THE ZABBIX JOURNEY

EMPOWER EMPLOYEES WITH ZABBIX

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USER CONCEPT

ZABBIX

ROLES

ROLE	SUPER ADMIN	ADMIN	OPERATIONAL	MAINTENANCE	USER
USER COUNT	10	55	206	65	286
TYPE	ZABBIX BUILT IN	ZABBIX BUILT IN	**CANCOM SPECIFIC**	ZABBIX BUILT IN	ZABBIX BUILT IN
USE IN CANCOM	MONITORING TEAM	TECHNICAL TEAMS (key users)	TECHNICAL TEAMS (all members)	24/7 SERVICE DESK	OTHER EMPLOYEES
USE OUTSIDE CANCOM	INITMAX	X	X	X	CUSTOMERS
HOSTS VISIBLE	✔ ALL	✔ ALL	✔ ALL	✔ ALL	✔ CANCOM ✔ CUST
EDIT HOSTS	✔ ALL	✔ SPECIFIC	✔ SPECIFIC	X	X
EDIT TEMPLATES	✔ ALL	✔ SPECIFIC	X	X	X
MAINTENANCE	✔ ALL	✔ SPECIFIC	✔ SPECIFIC	✔ ALL	X

ⓘ **EDIT HOSTS**
- MODIFY IP
- ADD/REMOVE TEMPLATES
- DISABLE HOST
- SET TAGS AND MACROS ON HOST LEVEL

ⓘ **APPROVAL PROCESS**
TO GRANT RESPECTIVE ROLES IS SUBJECT TO THE RESPECTIVE AUTHORITIES AT THE MANAGERIAL LEVEL

QUALITY GATE PROCESS REQUIRED

USER CONCEPT

MAPPING

CANCOM ZABBIX

ROLES ↔ USER GROUPS ↔ TEMPLATE GROUPS ↔ HOST GROUPS ↔ HOSTS

CMDB CANCOM

USERS IN ACTIVE DIRECTORY ↔ TEAM ASSIGNMENT GROUPS ↔ CONFIGURATION ITEMS
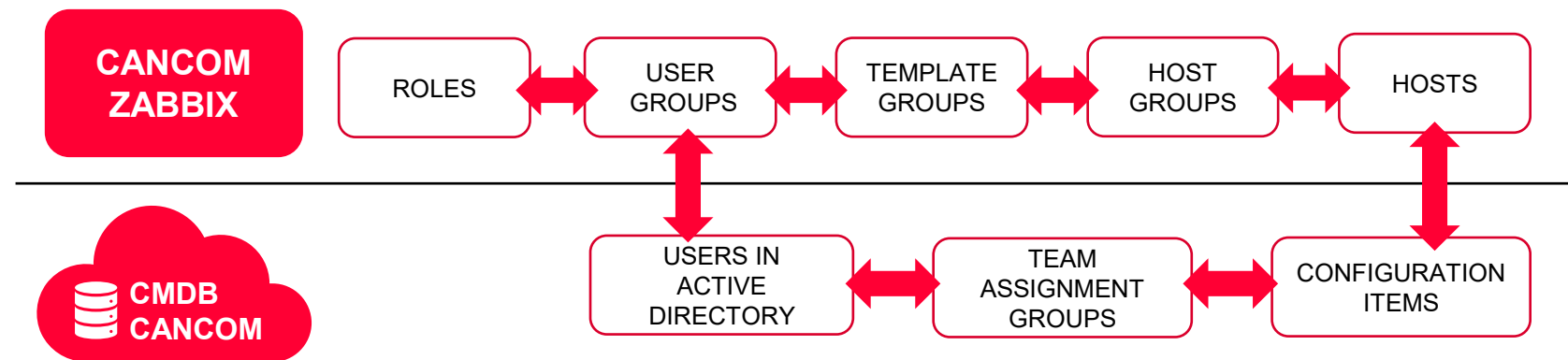
SAML/SSO

SECURE AUTHENTICATION

622

TOTAL NUMBER OF ACCOUNT HOLDERS

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THE ZABBIX JOURNEY

INTEGRATION WITH POWER BI

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ZABBIX INTEGRATION WITH POWER BI

ZABBIX

CANCOM Zabbix

Reporting Database

Power BI

CANCOM Portal

DATA
SOURCE

IN CANCOM ZABBIX

REGULAR
TRANSFER

TO DEDICATED DB

VISUALIZE
DATA

IN POWER BI INTERNALLY

CUSTOMER
DELIVERY

VIA CANCOM CLOUD PORTAL

PUSH
DATA

BASED ON ZABBIX TAGS

EXPORT
DATA

IN FORM OF PDF

ZABBIX INTEGRATION WITH POWER BI

ZABBIX

USE CASE - MONITORING CATALOG

CANCOM STANDARDS
TO FOLLOW

LINKED TEMPLATES
FOR CANCOM HIERARCHY

LINKED SCHEME
OF IMPLEMENTATION

TEMPLATE	SCENARIO	MODULE
ASSIGNED TO HOST	✔ YES	✔ NO
ITEM	✔ NO	✔ YES
TRIGGER	✔ NO	✔ YES
	SCENARIO IS AN EMPTY TEMPLATE TO CONSOLIDATE NUMBER OF MODULES WITH INHERITED ITEMS, TRIGERS ETC.	MODULE MONITORS ONLY A SPECIFIC RESOURCE OR COMPONENT MODULE CAN BE LINKED TO MULTIPLE SCENARIOS
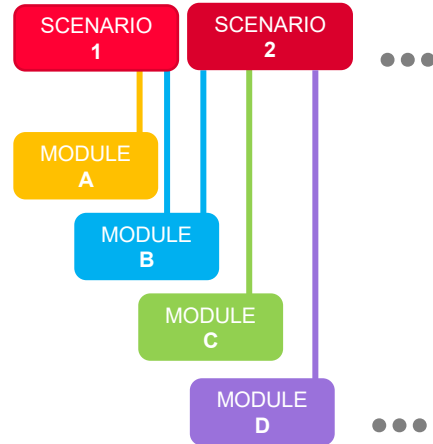
ZABBIX INTEGRATION WITH POWER BI

USE CASE - MONITORING CATALOG

STANDARD REQUIREMENTS

FOR CANCOM STANDARD PORTFOLIO

REQUIREMENTS	SCENARIO	MODULE
TAGS	#scenario	#module
	#owner	#owner
	#class	#class
	#target	#target
INFORMATION	responsible team group "Templates/MaSe-*"	responsible team group "Templates/MaSe-*"
	no direct items	not assigned to any host

TRANSFER TO DATABASE

INLCUDES FOLLOWING INFORMATION

Reporting Database

- TEMPLATE NAME
- TEMPLATE TAGS NAME AND VALUE
- ITEM NAMES
- TRIGGER NAMES

AUTOMATED QUALITY GATE

SELFMONITORING OF REQUIREMENTS AND RESPECTIVE DATA TRANSFER

CMS Monitoring Catalogue

CANCOM
Managed Services GmbH
Reporting Services

Scenario 28	Module 62
Class 1	Items 399

Triggers
162

Class
Multiple selections

Scenario Template
All

Module Template
All

Items
All

Trigger
All

Owner
All

Target
All

Class	Scenario Template	Module Template	Items	Triggers
⊞ application				
⊞ cloud				
⊞ database				
⊞ hardware				
⊞ nis				
⊟ os	⊟ Module - Basic - Linux OS - ZBX active	⊟ Module - Linux Services by Zabbix agent	⊟ atd	atd is not running
			⊟ chronyd	chronyd or ntpd or systemd-timesyncd is not r
			⊟ cron	Cron is not running
			⊟ crond	Cron is not running
			⊟ ntp	chronyd or ntpd or systemd-timesyncd is not r
			⊟ ntpd	chronyd or ntpd or systemd-timesyncd is not r
			⊟ postfix	
			⊟ rsyslogd	rsyslog is not running
			⊟ snapcreator	
			⊟ sshd	sshd is not running
			⊟ syslog	rsyslog is not running
			⊟ systemd-timesyncd	chronyd or ntpd or systemd-timesyncd is not r
		⊟ Module - Log4Shell - ZBX passive	⊟ Number of proccessess containing log4j-core-2.0-beta9 till 2.14.x	Vulnerable log4j in process list found
			⊟ Number of proccessess containing mimo or xlog	Process mimo or xlog in process list found
		⊟ Module - Zabbix Agent configuration by ZBXA	⊟ Zabbix Agent config file	
			⊟ Zabbix Agent HostMetadata	

THE ZABBIX JOURNEY

CANCOM CLOUD PORTAL
MONITORING HUB

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CANCOM CLOUD PORTAL

YOUR GATEWAY TO THE CANCOM CLOUD

CENTRAL ACCESS POINT

FOR AUTOMATED CLOUD SERVICES
ON DEMAND SELF-SERVICE PROVISIONING

INFRASTRUCTURE SERVICES

COMPUTE, STORAGE, NETWORKING
FROM CANCOM DATACENTRES

CANCOM XaaS FLEXIBILITY

FLEXIBLE ANYTHING AS A SERVICE OFFERINGS
(SOFTWARE, PLATFORM, INFRASTRUCTURE)

MANAGED SERVICES

FOR PLATFORMS ACROSS CANCOM
DATACENTRES AND PUBLIC CLOUDS

MONITORING HUB

REPORTING

MONITORING HUB

AT CANCOM CLOUD PORTAL

ZABBIX   REDUCE HUMAN ERRORS
INCREASE SECURITY & STABILITY

CORE MONITORING TOOL
COMPLEX DATA PRESENTATION
COMPLEX TASKS
LIMITED ACCESS FOR SKILLED EMPLOYEES

MONHUB   SIMPLIFY OPERATIONS
INTEGRATE TO CC PORTAL

EXTENSTION OF ZABBIX THROUGH API
SIMPLE OPERATIONAL TASKS
INTEGRATION WITH TICKETING SYSTEM
ACCESS FOR OPERATORS AND CUSTOMERS

Monitoring Hub

Dashboard

Hosts

Maintenance

Monitoring HUB

Monitoring Hub is a comprehensive monitoring and observability platform that provides real-time insights into your infrastructure, applications, and services.

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet.

How it works

A detailed explanation of this service and all other available services may be found in our documentation.

Pricing & Documents

All costs are pay-as-use and resources will be billed hourly.

See the price list in the metering-engine for details.

SERVICES

CANCOM

Richard Germanus ⌄

Monitoring Hub

Dashboard

Hosts

dummy

Actions ⌄   ↻

Search

Hosts

	Host	Device Ty...	CPU	Memory	Hostgroup	Tags		
☐	dev-ca01.dev...	Unknown	● NT	● NT	Monitored...			
☐	dev-wbh01.d...	Unknown	● NT	● NT	Monitored...			
☐	dev-dc02.dev...	Unknown	● NT	● NT	Monitored by...	#no-alert, #...		
☐	linux-test01.i...	linux-system	● OK	● OK	Customer/DU...	#no-alert, #		
☐	var1.f1	Unknown	● OK	● OK	Customer/DU...	#no-alert	no	Active
☐	isr-1161-sec.f1	Unknown	● OK	● OK	Customer/DU...	#no-alert	no	Active
☐	dev-fs02.dev...	Unknown	● NT	● NT	Monitored by...	#no-alert	no	Active
☐	xrv4	Unknown	● OK	● OK	Customer/DU...	#no-alert	no	Active
☐	DUMMY_MD...	Unknown	● NT	● NT	Monitored by...	origin-import,...	yes	Active
☐	dev-dc01.dev...	Unknown	● NT	● NT	Monitored by...	#no-alert, #cl...	no	Active
☐	xrv6	Unknown	● OK	● OK	Customer/DU...	#no-alert	no	Active
☐	var2.f1	Unknown	● OK	● OK	Customer/DU...	#no-alert	no	Active
☐	rr1.f1	Unknown	● OK	● OK	Customer/DU...	#no-alert	no	Active
☐	xrv2	Unknown	● OK	● OK	Customer/DU...	#no-alert	no	Active
☐	dev-if01.dev...	Unknown	● NT	● NT	Monitored by...	#no-alert	no	Active

Menu overlay:

Set maintenance

Enable hosts   State management ▸

Disable hosts   Alarm management ▸

☐ Only show writeable

Maintenance

LOCAL ENDPOINT EDITOR

DOCS

CONTACT

Page Size: 50   1 to 23 of 23   I< < Page 1 of 1 > >I

CANCOM DEV

CANCOM Richard Germanus ▾

Monitoring Hub

Dashboard

Hosts

Maintenance

Create a new Maintenance window

Util for creating maintenance windows in Zabbix for multiple hosts or hostgroups at the same time. At least one host or hostgroup has to be provided. If any host or host group is not found, no maintenance window will be created!

Maintenance window creation will be logged (username, timestamp, parameters, ...) to the audit log!

Reason for maintenance*

For example CS123456, CHG123456

List of hosts*

One host per line

Start of maintenance window*

Now   ▾

When do we start the maintenance window?

End of maintenance window*

Duration (in minutes)   ▾

When do we end the maintenance window?

Duration of maintenance in minutes

60

Number in minutes

THE ZABBIX JOURNEY

TEAM

CANCOM

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CANCOM MONITORING TEAM

DEV CLUSTER

| RICHARD GERMANUS | MAROS HOSPUDKA | KATARINA SABOVA | EMIL HALKO | JAN MILKOVIC | LADISLAV DUSA |
| TEAM MANAGER | PROJECT MANAGER | REPORTING | ARCHITECT | ENGINEER | ENGINEER |

ZABBIX CERTIFIED USER — ZABBIX CERTIFIED USER — ZABBIX CERTIFIED USER — ZABBIX CERTIFIED EXPERT — ZABBIX CERTIFIED EXPERT — ZABBIX CERTIFIED EXPERT

OPS CLUSTER

| PETER BIKKI | ERIK KACKOS | MARTIN SABO | JAN TKAC | DIBESH SHRESTHA | RASTISLAV MAZUR |
| CONSULTANT | ENGINEER | ENGINEER | ENGINEER | SENIOR ADMIN | STUDENT ASSISTANT |

ZABBIX CERTIFIED PROFESSIONAL — ZABBIX CERTIFIED PROFESSIONAL — ZABBIX CERTIFIED PROFESSIONAL — ZABBIX CERTIFIED PROFESSIONAL — ZABBIX CERTIFIED SPECIALIST — ZABBIX CERTIFIED USER

THANK YOU!

ZABBIX SUMMIT

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