

VTcenter Kraków

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0 ALLGEMEIN

0.1 Purpose of document

This document describes characteristics for servers, network and software that is needed to run VTcenter applications in Kraków.

0.2 Distribution

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0.3 Authorization

checked and approved	
date	

0.4 History

Version	Date	Editor	Description
00-02-00	20.04.2023	Haftmann	Requirements for new hardware

0.5 Open subjects

Colored background highlight text passages open issues that require clarification.

Importance of color coding:

- examine or edit by GEVAS software
- examine or edit by ZDMK

0.6 Content

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1 PHYSICAL SERVERS

1.1 Overview

1.1.1 List of servers

The physical servers consists of:

- 1 Database server
- 1 Terminal server
- 1 Backup server
- 2 Host servers

The servers will be places in an existing rack.

1.1.2 Minimum requirements

The servers must be delivered from manufacturer DELL.

All servers have the following minimum equipment:

- Physical RAID Controller, Battery buffered, 2GB NV Cache
- Onboard 2x Gigabit Ethernet (RJ45)
- Redundant power supply
- Rails with Cable Management Arm
- IDRAC Enterprise
- 7 years Dell hardware support "Next Business Day"
- Microsoft Windows 2022 Standard, English language

1.2 Specification of hardware servers

1.2.1 Database server

Requirements:

Dell Power Edge R450

- Minimum requirements
- Processor: 2x Intel Xeon E5-4309, 16 Cores
- 128 GB Memory
- 2x 480 GB SSD (mixed use) RAID 1
- 4x 1,92 TB SSD (mixed use) RAID 10

Partitions:**RAID 1 (480GB)**

- C: Operating system, 180 GB
- D: Programs, 300 GB

RAID 10 (3840 GB)

- E: Databases, 3840 GB

Note:

The processors must not have more than 16 cores since the Oracle license is only allowed for 16 cores.

Size of Database Partition:

The dimension of database is for 120 controllers for 60 days.

1.2.2 Terminal server

Requirements:

Dell Power Edge R450

- Minimum requirements
- Processor: 2x Intel Xeon E5-4309, 16 Cores
- 64 GB Memory
- 2x 960 GB SSD (read intensive) RAID 1
- 10 Microsoft Remote Desktop Services 2022 User CAL, 1 for each defined user

Partitions:**RAID 1 (960GB)**

- C: Operating system, 300 GB
- D: Programs and Data, 660 GB

Recommendation for Users:

- The server is calculated for 10 users.

1.2.3 Backup server

Requirements:

Dell Power Edge R450

- Minimum requirements
- Processor: 1x Intel Xeon E5-4310, 12 Cores
- 16 GB Memory
- 2x 600 GB SSD (15K) RAID 1
- 2x 16000 GB SATA RAID 1

Partitions:

RAID 1 (600GB)

- C: Operating system, 200 GB
- D: Programs, 400 GB

RAID 1 (16000GB)

- E: Backup data, 16000 GB

1.2.4 Host server 1

Requirements:

Dell Power Edge R450

- Minimum requirements
- Processor: 2x Intel® Xeon® Silver 4310 2.1G, 24 Cores
- 128 GB Memory
- 2x 1,9 TB SSD (read intensive) RAID 1
- Microsoft HyperV

Partitions:**RAID 1 (1920GB)**

- C: Operating system, 200 GB
- D: Programs and VMs, 1700 GB

1.2.5 Host server 2

The host server 2 has the same requirements as host server 1.

2 VIRTUAL SERVERS

2.1 Overview

2.1.1 List of servers

On the two host servers the following virtual servers will be run:

- Application server Central (Host server I)
- Application server Balance I (Host server I)
- Application server Balance II (Host server I)
- Communication server OCIT-O (Host server II)
- Application server OCIT-O (Host server II)
- Application server OTS 2 (Host server II)

2.2 Specification of virtual servers

2.2.1 Time server

The time server ntp.org is used via internet.

2.2.2 Application servers

All Application servers have the same requirements:

Characteristics

- 16 GB Memory
- 8 Cores
- Microsoft Windows 2022 Standard, English language

Partitions:

- C: Operating System: 100 GB
- D: Programs: 150 GB

3 ADDITIONAL EQUIPMENT

3.1 Additional hardware

The following additional components are needed:

- 19" Rack (existing rack)
- System console TFT 19", Keyboard and mouse (new)
- KVM Console switch 8 Port 19" (new)
- Network Switch, 1 GBit/s 19" (new)
- External DVD-Drive USB

3.2 New software licenses

- Backup software for physical machines: AOMEI Technican Plus
- Backup software for for VMs: AOMEI Cyber Backup
- Virus Detection: Microsoft Defender
- Database: Oracle Standard Edition 2, version 19c, 10 Users
- System monitoring: Advanced HostMonitor Advanced

4 NETWORK

4.1 IP addresses

The following IP addresses are used (Network mask 255.255.0.0):

Unit	IP address for delivery
Gateway	172.19.0.1
Database Server Hardware	172.19.0.102
Database Server BMC	172.19.0.202
Terminal Server Hardware	172.19.0.109
Terminal Server Hardware BMC	172.19.0.209
Hostserver II Hardware	172.19.0.111
Hostserver II Hardware BMC	172.19.0.211
Hostserver II Hardware	172.19.0.112
Hostserver II Hardware BMC	172.19.0.212
VM Application server Central	172.19.0.103
VM Application server Balance I	172.19.0.105
VM Application server Balance II	172.19.0.106
VM Communication server	172.19.0.108
VM Application server OCIT-O	172.19.0.104
VM Application server OTS-2	172.19.0.107
Backup server	172.19.0.120
Backup server BMC	172.19.0.220

5 SOFTWARE MODULES

5.1 List of servers

Server	Services	Host
Database server	Oracle VTmessenger SwiftMQce Postgres LDAP	Physical
Terminal server	VTnet VTmonitor VTscheduler VTassist VTassistBal	Hostmon Physical
Backup server		Physical
Application server Central	TakK AGG TakK OMK JAUT-Server OTS-Server internal OTS-Server external MELD-Server	Host I
Application server Balance I	Balance 1..n	Host I
Application server Balance II	Balance 1..n	Host I
Communication server OCIT-O	Corba OPA OPA-Bridge	Host II
Application server OCIT-O	TakK AKT 1 TakK MLD 1 ~JMS TakK OPD 1 ~JMS TakK PDI 1 ~JMS OTS-Server 1 ~JMS SwiftMQce	Host II
Application server OTS 2	TakK AKT 2 TakK MLD 2 ~OTS2 TakK OPD 2 ~OTS2 TakK PDI 2 ~OTS2 OTS-Server 2 ~OTS2	TakK AKT 3 TakK MLD 3 ~OTS2 TakK OPD 3 ~OTS2 TakK PDI 3 ~OTS2 OTS-Server 3 ~OTS2 Host II

5.2 Installations issues

- The user administration is done by a LDAP service.
A Microsoft domain is not used or needed.
- The services run under the account of “administrator”.

6 CHANGEOVER PROCEDURE

6.1 Changeover

- The existing and the new system run in parallel.
- The new system gets temporary ip addresses, see 4.1
- Step-by step each new server gets the IP address of an existing server.
- The IP addresses of the controller itselfs is not changed.
- During this configuration process the old and new system run parallel.