

Praxisbericht

Oracle XE – 11.2

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Übersicht zu den Versionen

- Oracle XE (ca.100x)
 - EBI (seit 2009 XE - statt Oracle PE)
 - diverse Testinstallationen (z.B. APEX)
- SAP Oracle EE (ca. 25x)

„SAP Lizenz“ wird immer mit EE ausgeliefert.

 - User-Lizenz
 - OEM Packs inklusive
 - Diverse Optionen wie Compression / Partitioning / ...
- NOSAP Oracle EE (ca. 25x)
 - CPU-Lizenz
 - OEM Packs: Diagnostic + Tuning
- RAC Datenbank (5x)
 - CPU-Lizenz
 - OEM Packs: Diagnostic + Tuning
 - Option RealApplicationClusters (Clusterware+ASM+DB)

Oracle XE

- Merkmale einer **Express Edition**:
 - kostenlos erhältlich
 - eingefrorener Versionsstand ohne PatchSets einer „reifen“ Ausgabe (10.2.0.1 bzw. 11.2.0.2)
 - grundsätzlich vollständig funktionfähig (!)
 - PL/SQL + DBMS_* -Packages
 - Keine Parallelität
 - Vollständige Entwicklungsumgebung APEX (!)
 - Diese dient auch als Benutzerinterface
 - Einschränkungen bzgl. Ressourcen Manager

Einschränkungen bei der XE (11.2)

- Plattform
 - Windows-32Bit (diverse) , Linux-64Bit (diverse)
- CPU Limit
 - Maximal 1 CPU. (einschließlich z.B. Dual-Core-CPU, Quad-Core-CPU, ...)
- XE Installation
 - Maximal 1 XE Installation möglich
- Daten Limit
 - 11.2: Nutzdaten dürfen „11G“ nicht übersteigen, danach ORA-12592.
 - 10.2: Nutzdaten dürfen „4G“ nicht übersteigen, danach ORA-12592.
- RAM Limit
 - 10.2+11.2: maximal 1GB (SGA +PGA)

Wichtige Features

(http://download.oracle.com/docs/cd/B25329_01/doc/license.102/b25456.pdf)

- Basic Replication (readonly – MAVs)
- Durchweg keine Parallelisierung
- Backup
 - (-) Flashback
 - (+) RMAN online Backup, Data Pump: expdp/impdp
- Management:
 - (-) ASM, RM
 - (+) ADM, AMM, AUM, AOSM, Server Alerts
- Entwicklung:
 - (-) kein Java in DB, wenige Codepages, ...
 - (+) PL/SQL, APEX, unicode, ...
- Installation:
 - XE: 0,27GB (11.2.0.2) -> nicht OUI basiert. (oracle.exe=118MB)
 - EE: 5,10GB (11.2.0.2) -> OUI inkl. Patchmanagement

Beispiel: Online Backup mit RMAN

```
cmd Eingabeaufforderung - rman target /
SQL> alter database open
2 ;
Database altered.
SQL> exit
Disconnected from Oracle Database 11g Express Edition Release 11.2.0.2.0 - Beta
D:\oracle\product\11.2.0\XE\app\oracle\product\11.2.0\server\bin>sqlplus / as sy
sdba
SQL*Plus: Release 11.2.0.2.0 Beta on Do Mai 19 16:34:33 2011
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Connected to:
Oracle Database 11g Express Edition Release 11.2.0.2.0 - Beta
SQL> exit
Disconnected from Oracle Database 11g Express Edition Release 11.2.0.2.0 - Beta
D:\oracle\product\11.2.0\XE\app\oracle\product\11.2.0\server\bin>rman target /
Recovery Manager: Release 11.2.0.2.0 - Beta on Do Mai 19 16:34:37 2011
Copyright (c) 1982, 2009, Oracle and/or its affiliates. All rights reserved.
connected to target database: XE (DBID=2628609861)
RMAN> backup database;

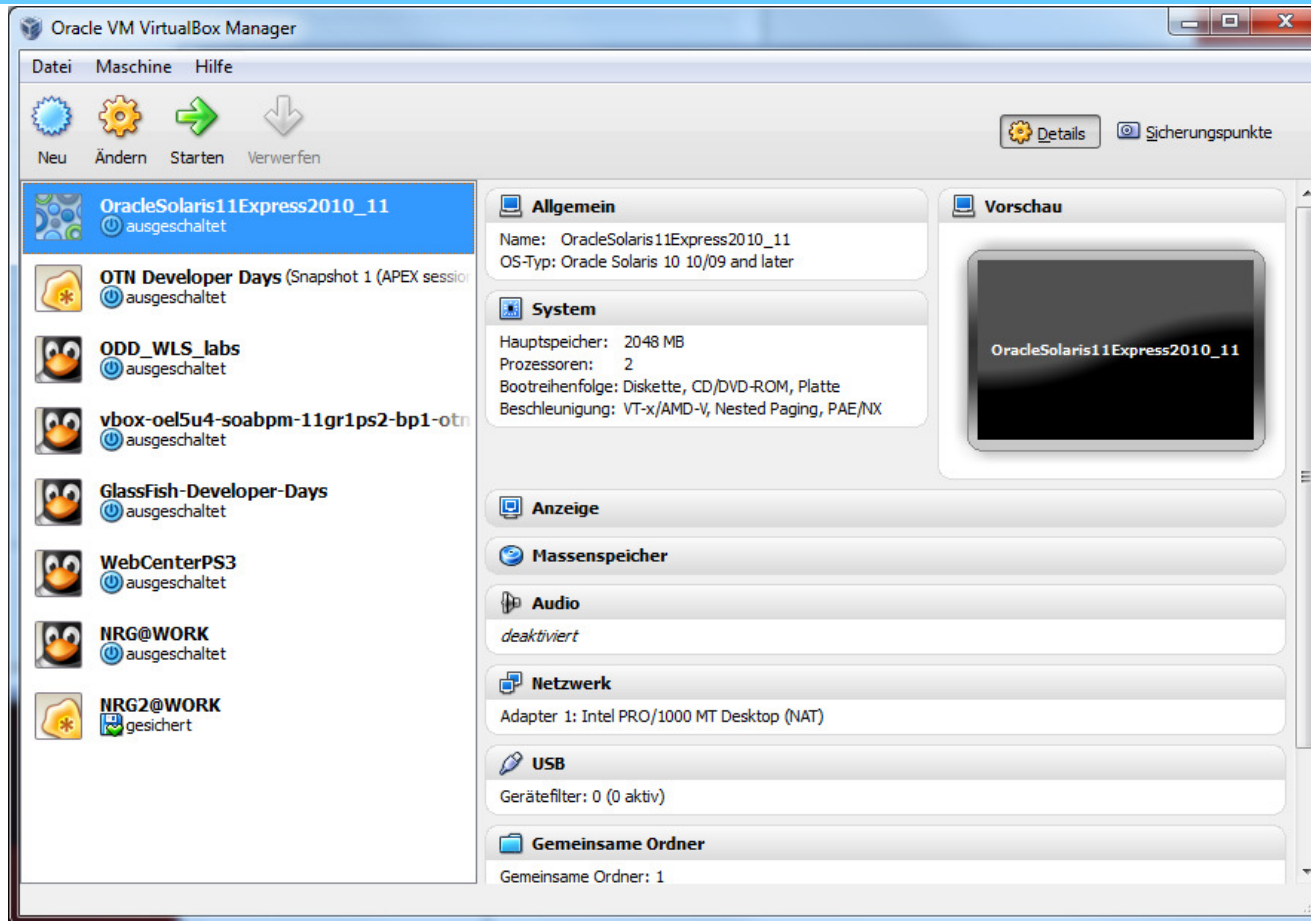
Starting backup at 19.05.11
using target database control file instead of recovery catalog
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=10 device type=DISK
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00002 name=D:\ORACLE\PRODUCT\11.2.0\XE\APP\ORACLE\ORA
DATA\XE\UNDOTBS1.DBF
input datafile file number=00001 name=D:\ORACLE\PRODUCT\11.2.0\XE\APP\ORACLE\ORA
DATA\XE\SYSTEM.DBF
input datafile file number=00004 name=D:\ORACLE\PRODUCT\11.2.0\XE\APP\ORACLE\ORA
DATA\XE\USERS.DBF
input datafile file number=00003 name=D:\ORACLE\PRODUCT\11.2.0\XE\APP\ORACLE\ORA
DATA\XE\SYSAUX.DBF
channel ORA_DISK_1: starting piece 1 at 19.05.11
channel ORA_DISK_1: finished piece 1 at 19.05.11
piece handle=D:\ORACLE\PRODUCT\11.2.0\XE\APP\ORACLE\FLASH_RECOVERY_AREA\XE\BACKU
PSET\2011_05_19\01_MF_NNNDP_TAG20110519T163444_6XBBN5QX_.BKP tag=TAG20110519T163
444 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:55
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
including current control file in backup set
including current SPFILE in backup set
channel ORA_DISK_1: starting piece 1 at 19.05.11
channel ORA_DISK_1: finished piece 1 at 19.05.11
piece handle=D:\ORACLE\PRODUCT\11.2.0\XE\APP\ORACLE\FLASH_RECOVERY_AREA\XE\BACKU
PSET\2011_05_19\01_MF_NCSNF_TAG20110519T163444_6XBB0XQT_.BKP tag=TAG20110519T163
444 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
Finished backup at 19.05.11

RMAN>
```

Beispiel: memory_target=2GB ?

- SQL> alter system set memory_target=2G scope=spfile;
- System altered.
- SQL> shutdown abort
- ORACLE instance shut down.
- SQL> startup
- ORA-01078: failure in processing system parameters
- ORA-47500: XE edition memory parameter invalid or not specified
- SQL> shutdown abort
- ORACLE instance shut down.
- SQL> startup nomount
- ORA-01078: failure in processing system parameters
- ORA-47500: XE edition memory parameter invalid or not specified
- SQL> alter system set memory_target=1G scope=spfile;
- alter system set memory_target=1G scope=spfile
- *
- ERROR at line 1:
- ORA-01034: ORACLE not available
- Process ID: 0
- Session ID: 130 Serial number: 5

Kombination im Paket : OracleXE + VirtualBox + Linux-64Bit = 0€



Aktive Workshops:

<http://www.oracle.com/technetwork/community/developer-vm/index.html>

Oracle EE

- Merkmale einer **E**nterprise **E**dition:
 - CPU Lizenz ist teuer
 - PSU kommt jedes Quartal, PS etwa jährlich
 - max. Funktionsumfang (!)
 - vollständige Entwicklungsumgebung APEX (!)
 - keine Einschränkungen bzgl. Ressourcen
 - Optionen möglich (z.B. RAC)
 - OEM mit Packs ohne weitere Kosten nutzbar
 - Tuning, Parallelität, Backup, ...

Einstieg: Beispiel für EE

SQL: >50% der Ressourcen, um Faktor >100.000 beschleunigt
 Anwendung: SAP CRM

Database Instance: CTZ > Advisor Central > SQL Tuning Results: SQL_TUNING_1304422309633 > Recommendations for SQL_ID:04w6dm7b9a88 > Logged in As SYSTEM

Compare Explain Plans

Original Explain Plan (Annotated)
 Indicates an adjustment from the original plan by the SQL Tuning Advisor
 Plan Hash Value: 2537222965

[Expand All](#) | [Collapse All](#)

Operation	Line ID	Object	Object Type	Order	Rows	Bytes	Cost	Time	CPU Cost	I/O Cost
SELECT STATEMENT	0			14	0.484	1,970,282,767	27,305,652,224	1,931,285		
HASH UNIQUE	1			13	0.484	1,970,282,767	27,305,652,224	1,931,285		
TABLE ACCESS BY INDEX ROWID	2	SAPDMA.CRM_ORDER_INDEX	TABLE	12	0.028	393,129,153	4,812,868,096	386,256		
NESTED LOOPS	3			11	0.484	1,970,281,767	27,304,951,808	1,931,285		
NESTED LOOPS	4			9	0.371	397,763,155	8,053,478,400	386,262		
NESTED LOOPS	5			5	0.258	397,759,155	8,053,436,928	386,258		
TABLE ACCESS BY INDEX ROWID	6	SAPDMA.CRM_ORDER_INDEX	TABLE	2	0.164	397,758,155	8,053,424,128	386,256		
INDEX RANGE SCAN	7	SAPDMA.CRM_ORDER_INDEX-0	INDEX (UNIQUE)	1		19,246,8	864,755,136	18,011		
TABLE ACCESS BY INDEX	8	SAPDMA.CRM_ACTIVITY_H	TABLE	4	0.023	0,1	3,286	0		

New Explain Plan With SQL Profile
 Plan Hash Value: 46654618

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Operation	Line ID	Object	Object Type	Order	Rows	Bytes	Cost	Time	CPU Cost	I/O Cost
SELECT STATEMENT	0			14	0.363	11,1	788,185	10		
HASH UNIQUE	1			13	0.363	11,1	788,185	10		
TABLE ACCESS BY INDEX ROWID	2	SAPDMA.CRM_JEST	TABLE	12	0.028	1,1	10,394	1		
NESTED LOOPS	3			11	0.363	10,1	87,771	10		
NESTED LOOPS	4			8	0.278	7,1	56,590	7		
NESTED LOOPS	5			5	0.193	4,1	30,711	4		
TABLE ACCESS BY INDEX ROWID	6	SAPDMA.CRM_ORDER_INDEX	TABLE	2	0.123	2,1	20,852	2		
INDEX RANGE SCAN	7	SAPDMA.CRM_ORDER_INDEXDW	INDEX	1		1,1	6,857	1		
TABLE ACCESS BY INDEX ROWID	8	SAPDMA.CRM_ACTIVITY_H	TABLE	4	0.023	0,1	3,286	0		
INDEX UNIQUE SCAN	9	SAPDMA.CRM_ACTIVITY_H-0	INDEX (UNIQUE)	3		0,1	1,804	0		
TABLE ACCESS BY INDEX ROWID	10	SAPDMA.CRM_ORDER_INDEX	TABLE	7	0.028	1,1	8,627	1		
INDEX RANGE SCAN	11	SAPDMA.CRM_ORDER_INDEXHQ	INDEX	6		0,1	3,499	0		
INLIST ITERATOR	12			10						

Fragen?

Vielen Dank für Ihre Aufmerksamkeit !