

Oracle Technology Monthly

Juli 2017

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Oracle Deutschland B.V. & Co KG

Beginn um 14:00

Audioübertragung über
Ihre PC-Lautsprecher

Audio => Integrated Voice Conference
=> Join Conference

Agenda

- 1 ➤ Cloud & Tech Neuigkeiten: Announcements, Referenzen etc.
- 2 ➤ Termine
- 3 ➤ Release Stand, Patchsets
- 4 ➤ Feature des Monats
- 5 ➤ Web 2.0



Oracle REST Data Services 3.0.10

- Bug Fixes
- **Performance Boost**
- neue Features
 - Auto PL/SQL
 - Creating RESTful Service through the Connections Navigator
- Download
 - <http://www.oracle.com/technetwork/developer-tools/rest-data-services/downloads/index.html>

Cloud News: Oracle Management Cloud Services 17.2.5

- Application Performance Monitoring
 - Unterstützung von Ruby Applikationen
- Log Analytics
 - Purge Data
- Infrastructure Monitoring
 - Weitere Cloud Services unterstützt, z.B. Amazon SQS, Amazon SNS
 - Weitere Entity Typen unterstützt, z.B. Apache Hadoop, Juniper MX Router
 - Microsoft SCOM Integration: SQL Server

Cloud News: Application Development Platform 17.2.5

- Java Cloud Service
 - Kontextuelle Hilfe in der UI
 - Koordiniertes Backup mit DB abschaltbar
 - Application Container Cloud Service
 - Ruby Unterstützung
 - Direktes Deployment über den Oracle Stack Manager
 - Developer Cloud Service
 - Neue Tutorials für Testautomation, Erweiterung von Oracle DB DevOps etc
- https://community.oracle.com/community/cloud_computing/platform-as-a-service-paas/oracle-developer-cloud-service

Cloud News: Neue Bare Metal Cloud Service Feature

- Compute
 - DenseIO Virtual Machine Shapes mit schnellen Solid State Disks
- Storage
 - Pre-Authenticated Requests, Public Buckets, ACL Buckets
- Compliance
 - SOC 1 und SOC 2 Type 1 Zertifizierung

Neue Open Source Container Utilities

- Neue Open Source Projekte auf GitHub für Developer zum Erzeugen und Debuggen von Container basierenden Applikationen
 - <https://blogs.oracle.com/developers/three-new-open-source-container-utilities>
- Secure Microcontainer Builder (Smith) :
 - <https://blogs.oracle.com/developers/the-microcontainer-manifesto>
- Microcontainer Debugging Tool (Crashcart):
 - <https://blogs.oracle.com/developers/hardcore-container-debugging>
- Alternative Container Runtime (Railcar):
 - <https://blogs.oracle.com/developers/building-a-container-runtime-in-rust>

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Termine

DOAG, Oracle Events in Ihrer Nähe, Internationale Events

- **13.7.2017** SIG HA Datenbank in München
<https://www.doag.org/de/event/eventdetails/536979>
- **12.9.2017** Berliner Expertenseminar Oracle 12C Hochverfügbarkeit mit Multitenant
<https://www.doag.org/de/event/eventdetails/534835>
- **15.9.2017** Trivadis TechEvent 2017 in Regensdorf (Schweiz)
Fokus: Innovation, Digital Business Transformation und CLOUD!
<http://m.trivadis.com/tech-event-2017>
- **21.9.2017 – 22.9.2017** DOAG 2017 Big Data Days in Kassel (Programm und Anmeldung)
Parallel 21. September **DOAG Reporting Day** und 22. September **DOAG Geodata Day**
<https://www.doag.org/de/event/eventdetails/542290>
- **11.12.2017** IT Tage in Frankfurt (Programm und Anmeldung)
Themen: Big Data, Datenbanken, Cloud Computing, IOT, Security, Docker, Microservices, Java, DevOps etc
<https://www.ittage.informatik-aktuell.de/>

Webcast Reihe: Big Data Insights & Cloud Journey

Webcasts

- Eine Serie von 4 Webcasts zur Vorbereitung – und als krönenden Abschluss eine Hands-On Session auf der DOAG Big Data in Kassel
 1. 24.8. 10-11 Uhr: Big Data heute und jetzt - eine Übersicht zu aktuellen Architekturen und Konzepten
 2. 31.8. 10-11 Uhr: Hybride Big Data -Infrastrukturen mit Big Data SQL
 3. 07.9. 10-11 Uhr: Machine Learning mit R ist OK - aber auch mit großen Datenmengen?
 4. 14.9. 10-11 Uhr: Visualisieren Sie nur oder Analysieren Sie schon?

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Aktuelle Software Release und Patchstände

| | Komponente | Patch (PSU)/Release | Patch (DBPro) | MOS Note ID |
|--------------------|-------------------|--------------------------|-----------------|------------------------------------------------------|
| Datenbank | 12.2.0.1 | | .170516/.170620 | 161818.1 / 1454618.1 |
| | 12.1.0.2 | .170418 | .170418 | |
| | 11.2.0.4 | .170418 | .170418 | |
| Eng. Systems | Exadata Storage | 12.2.1.1.1 12.1.2.3.5 | OEDA v17.180 | 888828.1 |
| | ODA | 12.1.2.11.0 | | 888888.1 / 2144642.1 |
| | MiniCluster | 1.1.30.2 | | 2153282.1 |
| Enterprise Manager | 13.2.0.0 / Agent | .170630 | .170630 | 2219797.1 |
| | 13.1.0.0 / Agent | .170418 | .170418 | 2124038.1 |
| | 12.1.0.5 / Agent | .170430 | .170620 | 2038446.1 |
| Checks | ORACHK / EXACHK | 12.2.0.1.3 | | 1268927.1 |
| | TraceFileAnalyzer | 12.2.1.1.1 | | 1513912.1 |

Aktuelle Software Release und Patchstände

| | Komponente | Version | Link / MOS Note ID |
|---------------|----------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dev Resources | SQL Developer/SQLcl | 17.2 | http://www.oracle.com/technetwork/developer-tools/sql-developer/downloads |
| | ORDS | 3.0.10 (Jun) | http://www.oracle.com/technetwork/developer-tools/rest-data-services/downloads/index.html |
| | Node.js | 1.13.1 (Apr) | https://github.com/oracle/node-oracledb |
| | Oracle NoSQL | 4.3.11 (CE) 4.4.6 (EE) (Apr) | http://www.oracle.com/technetwork/database/database-technologies/nosqldb/downloads/index.html |
| | Oracle Application Express | 5.1.2.00.09 (Jun) Patch #: 25786300 | http://www.oracle.com/technetwork/developer-tools/apex/downloads/index.html |
| Linux | Oracle Linux (OL) | 6.9, 7.3, UEK 4 | http://www.oracle.com/technetwork/server-storage/linux/overview/index.html |
| | Oracle VM (OVM) | 3.4.3 | http://www.oracle.com/technetwork/server-storage/vm/downloads/index.html |

Einführung des neuen Release Modells SQLdeveloper/SQLcl

- Neue Release Zyklen für
 - SQL Developer 17.2.0.188.1159
 - SQLcl 17.2.0.184.0917
- 17 - Year
- 2 - Quarter
- 0 - Patch number
- 184 - Day in Julian
- 0917 - hour and minute the build was done
 - Update quartalsweise

Cloud Computing
ORACLE
SQL Developer
17.2



Exchange Forums **Download** f t v

Oracle SQL Developer is a free integrated development environment that simplifies the development and management of Oracle Database in both traditional and Cloud deployments. SQL Developer offers complete end-to-end development of your PL/SQL applications, a worksheet for running queries and scripts, a DBA console for managing the database, a reports interface, a complete data modeling solution, and a migration platform for moving your 3rd party databases to Oracle.

"We are very pleased at the massive adoption of Oracle SQL Developer. SQL Developer has been embraced by the developer community as the de-facto standard database IDE for designing, developing, and DBA activities." - Michael J. Hichwa, Vice President of Oracle Database Tools

Download SQLcl 17.2

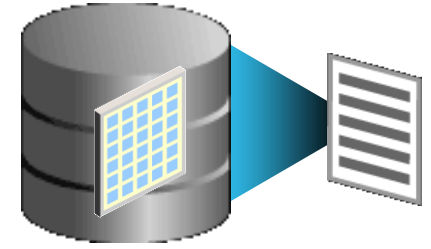
7/11/2017



Agenda

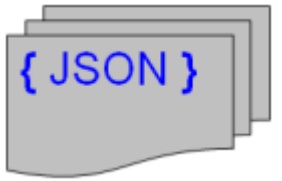
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Heterogene Daten und External Table Technologie



Steckbrief

- Read-Only zur Verfügungstellen von Daten über SQL*Loader (Access Treiber **ORACLE_LOADER**) Syntax
 - Optional ist eine Aufbereitung über ein vorgeschaltetes Preprocessing möglich
- Das Entladen von Daten – nämlich das Resultat eines beliebigen SELECT-Statements funktioniert über den Access Treiber **ORACLE DATAPUMP**
- Mehr http://www.oracle.com/webfolder/technetwork/de/community/dbadmin/tipps/external_tables/index.html
- Oracle Big Data SQL mit 2 weiteren Access Treibern
 - **ORACLE_HIVE** für Zugriff auf Daten in Apache Hive (siehe auch dbms_hadoop. **CREATE_EXTDDL_FOR_HIVE**)
 - **ORACLE_HDFS** für Zugriff auf Daten in HDFS



JSON Daten

- Ausgangssituation
 - Exportierte JSON Daten liegen außerhalb der Datenbank im üblichen Format vor
 - Oracle Beispiel: https://github.com/oracle/db-sample-schemas/blob/master/order_entry/PurchaseOrders.dmp
- Vorgehensweise
 - Zugriff über logisches Directory

```
create directory json_dir as '/home/oracle/db-sample-schemas-12.2.0.1/order_entry';
```

- External Table mit Spalte für die JSON Daten in der Datenbank

```
create table json_contents (json_document CLOB)
organization external
(type oracle_loader default directory json_dir
access parameters
(records delimited by 0x'0A'
fields (json_document CHAR(5000)))
location ('PurchaseOrders.dmp')) reject limit unlimited;
```

XML Daten

- Neu in 12.2: Mit Klausel XMLTAG sind auch Teildokumente eines XML Dokuments im Zugriff

```
CREATE TABLE ext_xml (xml_text VARCHAR2(2000))
ORGANIZATION external
(TYPE oracle_loader
  DEFAULT DIRECTORY home
  ACCESS PARAMETERS
  (RECORDS XMLTAG ("DepartmentName", "employeeName" )
  READSIZE 1024 SKIP 0 FIELDS NOTRIM MISSING FIELD VALUES ARE NULL)
  location ('emp.xml')) REJECT LIMIT UNLIMITED
```

Das Ergebnis

```
SQL> select * from ext_xml;
```

```
XML_TEXT
```

```
-----  
<DepartmentName>ACCOUNTING</DepartmentName>  
<employeeName>CLARK</employeeName>  
<employeeName>MILLER</employeeName>  
<employeeName>KING</employeeName>  
<DepartmentName>RESEARCH</DepartmentName>  
<employeeName>JONES</employeeName>  
<employeeName>SCOTT</employeeName>  
<employeeName>SMITH</employeeName>  
<employeeName>ADAMS</employeeName>  
<employeeName>FORD</employeeName>  
<DepartmentName>SALES</DepartmentName>  
<employeeName>WARD</employeeName>  
<employeeName>MARTIN</employeeName>  
<employeeName>BLAKE</employeeName>  
<employeeName>JAMES</employeeName>  
<employeeName>ALLEN</employeeName>  
<employeeName>TURNER</employeeName>  
<DepartmentName>OPERATIONS</DepartmentName>
```

Partitionierung für große Datenmengen

- Partitionierung von External Tables ab 12.2
 - Range
 - List
 - Composite Range
 - Composite List
- Mögliche Access Treiber ORACLE_LOADER, ORACLE_HIVE und ORACLE_HDFS

External Table: Beispiel mit List Partitioniert

```
create table ext_part
(last_name varchar2(25), gender varchar2(1), city varchar2(50), birth_year number)
ORGANIZATION EXTERNAL
(
type ORACLE_LOADER
DEFAULT DIRECTORY home
ACCESS PARAMETERS( RECORDS DELIMITED BY NEWLINE
                    FIELDS TERMINATED BY ';' optionally enclosed BY '"'
                    MISSING FIELD VALUES ARE NULL)
)
REJECT LIMIT UNLIMITED
PARTITION BY LIST (gender)
(
PARTITION part_f VALUES ('F')
                    LOCATION (home:'cust_f.csv'),
PARTITION part_m VALUES ('M')
                    LOCATION (home:'cust_m.csv'));
```

Constraints und External Tables

- In 12.2 sind Constraints wie NOT NULL, UNIQUE, PRIMARY KEY und FOREIGN KEY erlaubt

```
create table ext_constcust
(id number, last_name varchar2(50) not null, city varchar2(50), gender varchar2(1),
constraint pk_ext_custid primary key (id) rely disable)
ORGANIZATION EXTERNAL
( type ORACLE_LOADER
  DEFAULT DIRECTORY home
  ACCESS PARAMETERS( RECORDS DELIMITED BY NEWLINE
                    FIELDS TERMINATED BY ';' optionally enclosed BY '"'
                    MISSING FIELD VALUES ARE NULL)
  LOCATION ('cust.csv'))
REJECT LIMIT UNLIMITED
```

- Achtung: UNIQUE, PRIMARY KEY und FOREIGN KEY **nur** mit RELY DISABLE

Constraints und External Tables: die .log Datei

```
Field Definitions for table EXT_CONSTCUST
```

```
Record format DELIMITED BY NEWLINE
```

```
Data in file has same endianness as the platform
```

```
Rows with all null fields are accepted
```

```
Fields in Data Source:
```

```
  ID                                CHAR (255)
```

```
    Terminated by ";"
```

```
    Enclosed by "" and ""
```

```
    Trim whitespace same as SQL Loader
```

```
  LAST_NAME                          CHAR (255)
```

```
    Terminated by ";"
```

```
    Enclosed by "" and ""
```

```
    Trim whitespace same as SQL Loader
```

```
...
```

```
error processing column LAST_NAME in row 1 for datafile /home/oracle/cust.csv
```

```
ORA-01400: cannot insert NULL into (LAST_NAME)
```

Fazit External Tables

- Laden und Entladen von Daten über External Tables
- Datenaufbereitung mit Preprocessing
- Zugriff auf heterogene Daten (z.B. XML, JSON, Daten in Hadoop)
- Performanten Zugriff auf große Datenmengen
 - Über Partitionierung
 - Über deklarative Constraints

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Web 2.0

Blogs, Whitepaper, YouTube, Twitter, ...

- Non-CDB still exists in Oracle Database 12.2.
<https://mikedietrichde.com/2017/03/14/non-cdb-still-exists-in-oracle-database-12-2/>
- Aktualisierte White Paper zum Thema „Optimizer with Oracle Database 12c Release 2“
<http://www.oracle.com/technetwork/database/bi-datawarehousing/twp-optimizer-with-oracledb-12c-1963236.pdf>
- Multimodel Database with Oracle Database 12c Release 2
[http://download.oracle.com/otndocs/products/spatial/pdf/12c/Multimodel Database with Oracle Database 12c Release 2.pdf](http://download.oracle.com/otndocs/products/spatial/pdf/12c/Multimodel_Database_with_Oracle_Database_12c_Release_2.pdf)
- JSON Tutorial auf Oracle LiveSQL
https://livesql.oracle.com/apex/livesql/file/tutorial_EDVE861H6UF4Z20EV0RM4DK2G.html
- External Table auf dem deutschsprachigen Community Blog (<https://blogs.oracle.com/coretec>)
<https://apex.oracle.com/pls/apex/germancommunities/dbacommunity/tipp/6181/index.html>

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tinyurl.com/oratech-monthly



Fragen und Diskussionen auf Twitter

#oratechmonthly

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