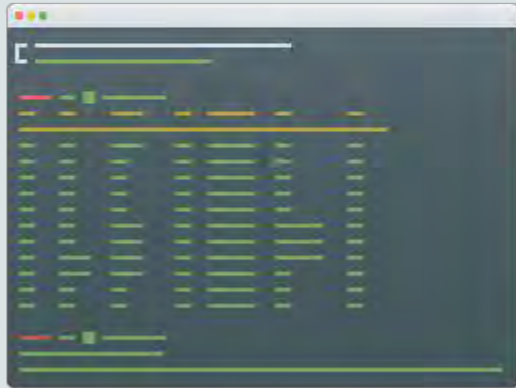


SQL Developer

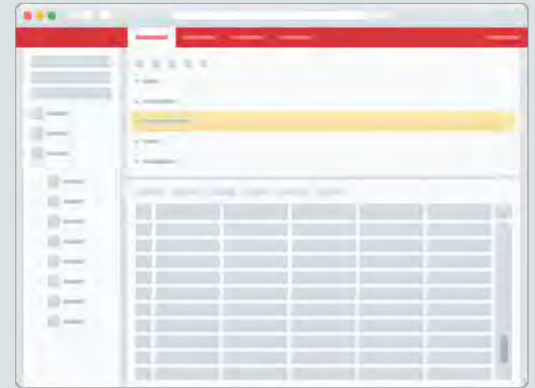
101: Features Overview



Terminal



Desktop



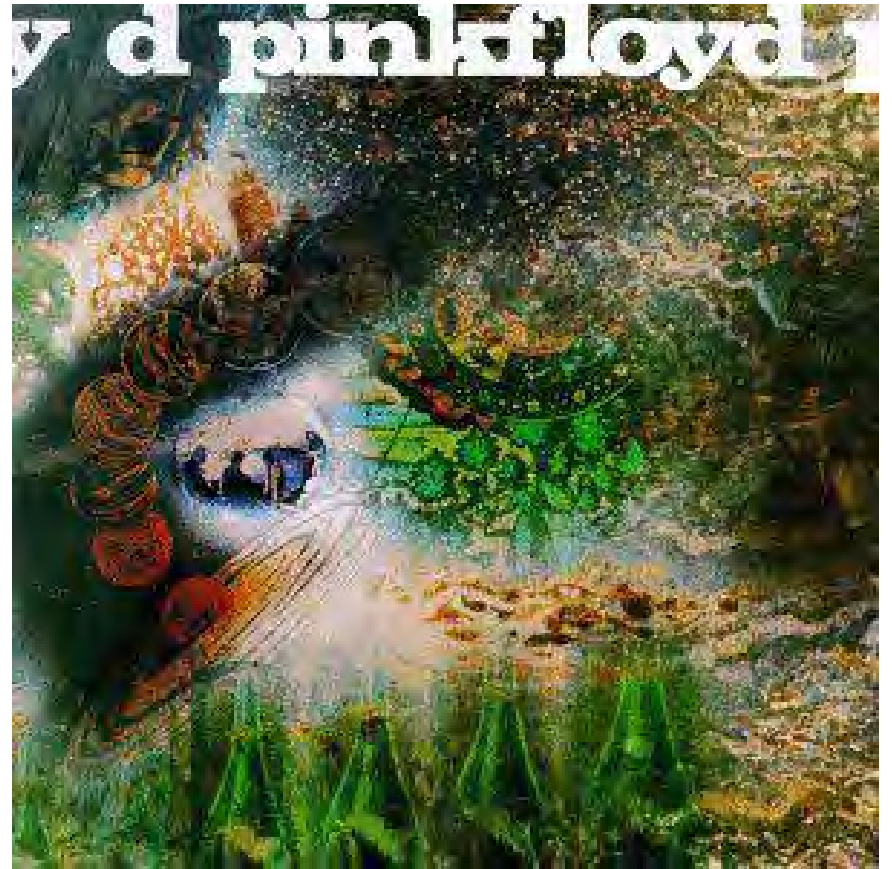
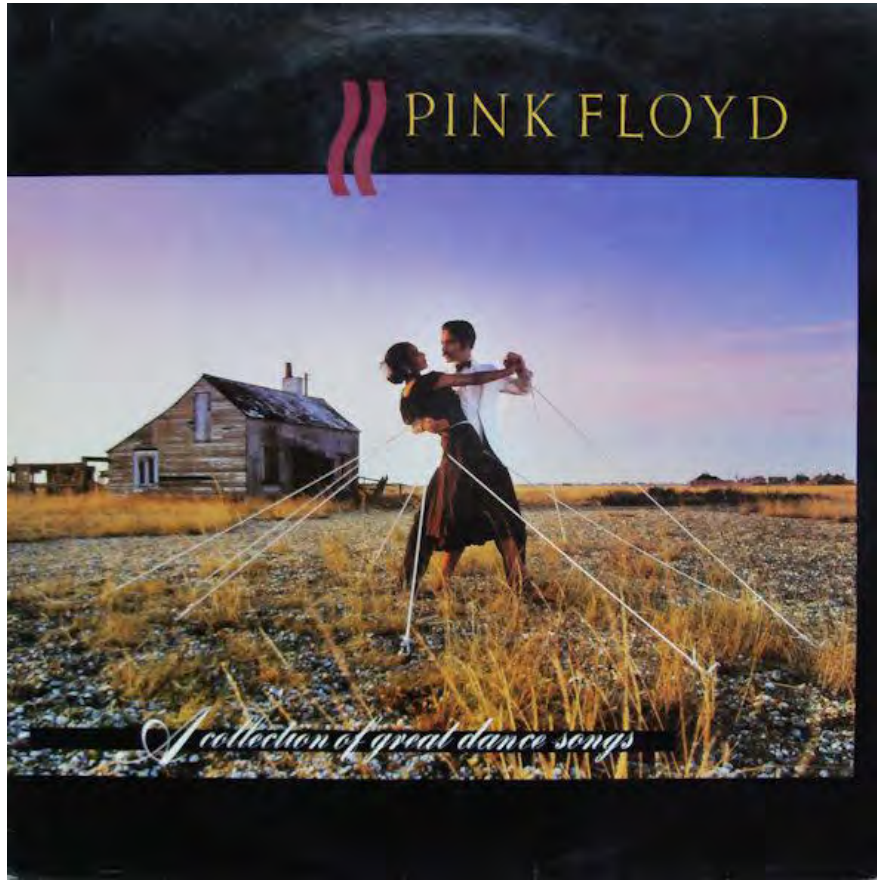
Web


Jeff Smith
Senior Principal Product Manager
Jeff.d.smith@oracle.com || @thatjeffsmith
Database Tools, Oracle Corp

whoami

- a tools geek since 2001
- that guy that blogs at thatjeffsmith.com
- #SQLDev Product Manager





 Cloud Computing

ORACLE SQL Developer 17.2



- **FREE** Oracle Database IDE/GUI
- Windows, OS X, *NIX
- My Oracle Support available via your DB license
- Supports on-premise and Oracle Cloud development

Ubiquitous & Popular

- 4.5+ million active users
- Top 20 download on all of Oracle Technology Network
- Runs on all major desktop platforms
- Saves our customers **BILLIONS** of dollars in license and maintenance revenue from 3rd party tools

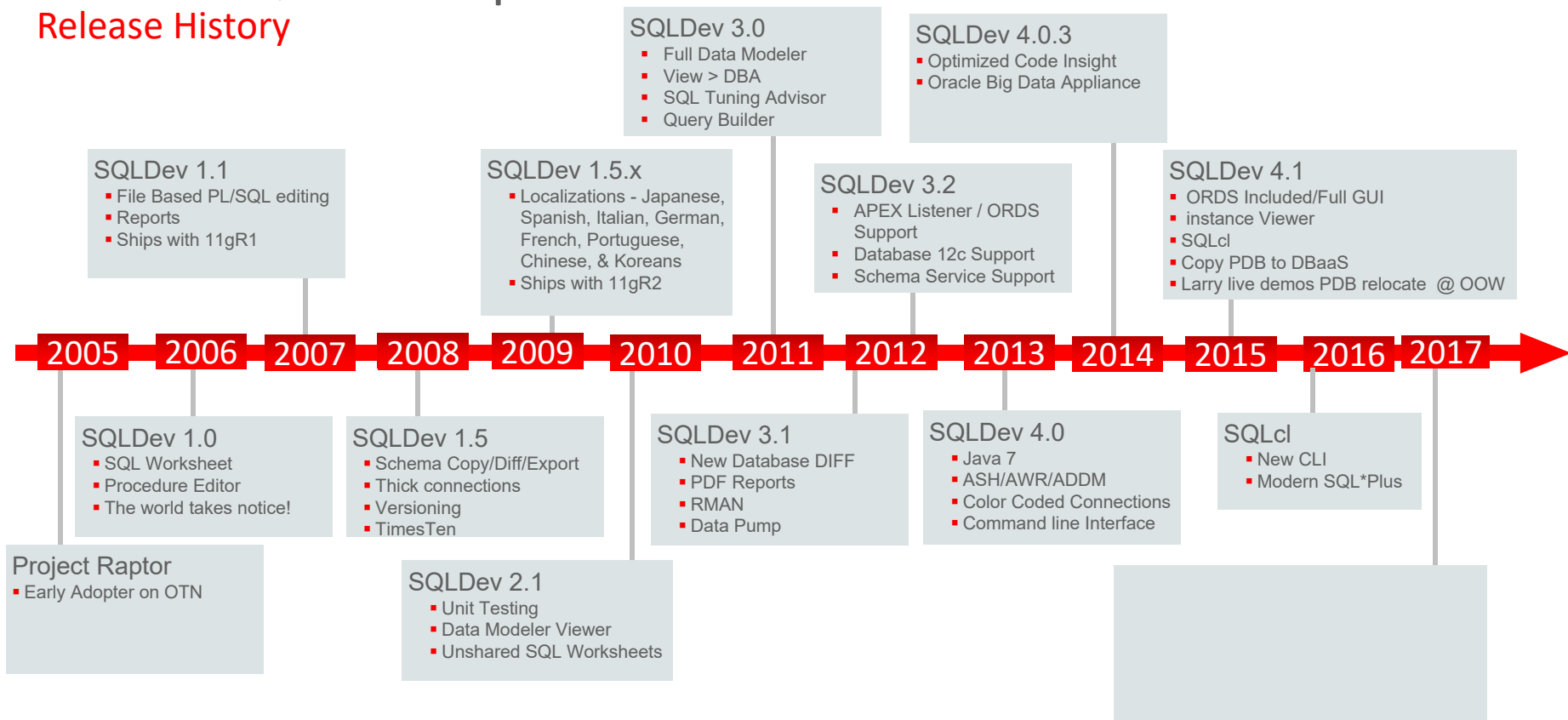
Easy to Get Started

- Included in all Database installs
- Standalone download on OTN
- Unzip and run
- Have a question? It's already covered in the medium and forum you're comfortable with.



Oracle SQL Developer

Release History



Oracle SQL Developer

Release FUTURE

2017.2

- Bug Fixes
- Sharding
- Data Guard

17.3

- REST driver support for SQLcl
- Bug Fixes

2017

2018

17.4/18.1

- *SQL Developer WEB*
- *Connectivity Enhancements*

Quarterly Releases!!!



Start Page | Sharded DB Viewer | 2d | Databases

east west

gsm1

shd1 dbs1 sqldev2b sqldev2c dbs2 sqldev2d sqldev2e

Database: UP
Chunks: 2
Broker Set: 1

Database: UP
Chunks: 2
Broker Set: 2

Database: UP
Chunks: 2
Broker Set: 1

Database: UP
Chunks: 2
Broker Set: 2

Shard sqldev2b PRIMARY
Broker Set 1 is highlighted
Associated Connection is 2b

- Open Instance Viewer
- Open Data Guard Console
- Edit Connection Association...
- Remove Connection Association

Oracle SQL Developer - DATAGUARD SYS null@12c

File Edit View Navigate Run Team Tools Window Help Automation

Connections

Start Page Sharded DB Viewer 20 Databases Console

Local Values

Properties Statistics Messages

Name	Value
1 Database Role	PHYSICAL STANDBY
2 Switchover Status	NOT ALLOWED
3 Dataguard Broker	ENABLED
4 Guard Status	NONE

Properties Statistics Messages

FACILITY	SEVERITY	DEST_ID	MESSAGE
1 Log Transport Services	Control	0	13
2 Log Apply Services	Warning	0	13
3 Log Transport Services	Informational	1	13
4 Log Transport Services	Control	1	13
5 Remote File Server	Informational	0	13
6 Remote File Server	Warning	0	13
7 Remote File Server	Informational	0	13
8 Remote File Server	Control	0	13
9 Log Transport Services	Warning	0	13
10 Log Transport Services	Informational	0	13
11 Log Transport Services	Control	1	13
12 Log Transport Services	Control	0	13

Properties Statistics Messages

NAME	VALUE	UNIT
1 transport lag	+00 00:00:00	day(2)
2 apply lag	+00 00:00:00	day(2)
3 apply finish time	+00 00:00:00.000	day(2)
4 estimated startup time	13	second

Connections

Sharding

2b
2c
2d
2e
Sharding

DBA

Connections

2e

Database Configuration

Database Status

Dataguard

Console

Databases

sqldev2c
sqldev2n

Local Values

Data Pump

Performance

RMAN Backup/Recovery

Resource Manager

SQL Translator Framework

Scheduler

Security

Storage

Tuning

exa express JEFF

hr

Sharding

Database Configuration

Database Status

Data Pump

Oracle Sharding

Sharded DB Viewer

sqldev2c

Role Status PRIMARY 0

sqldev2e

Role Status STANDBY 10019

Oracle SQL Developer, Major Feature Areas

- PL/SQL IDE
- SQL editor
- GUI for browsing and managing database objects
- Ad Hoc reporting
- Database Design & Data Modeling
- Database Administration
- 3rd Party RDBMS Migrations to Oracle
- Deploy and Administer Oracle REST Data Services
- REST Enablement of the Database
- Command Line Interface



SQL Worksheet

- Query results to grid
- Script engine (SQL*Plus)
- Visual Query Builder
- Query history
- Object completion
- Grammar checks
- Explain Plan
- SQL Formatter

The screenshot displays the Oracle SQL Worksheet interface. The main window is titled "Worksheet" and contains a query editor with the following SQL code:

```
1 SELECT *
2 FROM hockey_stats
3 fetch first 10 rows only;
4
5 select * from hr.employees where
6
```

A dropdown menu is open over the "where" clause, listing the following columns from the hr.employees table:

- commission_pct
- department_id
- email
- employee_id
- first_name
- hire_date
- job_id
- last_name
- manager_id
- phone_number
- salary

Below the query editor, the "Query Result" pane shows the results of the query. The first column is labeled "YEAR" and the second is "T". The results are as follows:

YEAR	T	TEAM	P	PLAYS	PLUSMINUS	ESG	ESA	ESP	PPG	PPA	PPP	SHG	SHA	SHP	DOLLAR_ES
2007	0	CHI	C	ARK	-13	7	9	16	2	4	6	1	4	5	
1991	0	PHI	C	ARMSTRONG, BILL	1	0	1	1	0	0	0	0	0	0	
2001	0	MIN	D	ARMSTRONG, CHRIS	-3	0	0	0	0	0	0	0	0	0	
2004	0	ANA	D	ARMSTRONG, CHRIS	-1	0	1	1	0	0	0	0	0	0	
2006	0	PIT	R	ARMSTRONG, COLBY	15	7	19	26	7	5	12	2	0	2	
2007	0	PIT	R	ARMSTRONG, COLBY	2	10	17	27	1	3	4	1	2	3	1
2008	1	PIT	R	ARMSTRONG, COLBY	6	8	13	21	1	1	2	0	1	1	
2008	2	ATL	R	ARMSTRONG, COLBY	-2	4	7	11	0	0	0	0	0	0	
2008	k	ATL	R	ARMSTRONG, COLBY	4	12	20	32	1	1	2	0	1	1	1
2009	0	ATL	R	ARMSTRONG, COLBY	5	19	17	36	3	1	4	0	0	0	2

Database GUI

The screenshot displays the Oracle SQL Developer interface. On the left, a tree view shows the database structure, including tables like EMPLOYEES, HR_EMPLOYEES, HR_JOBS, and HR_DEPARTMENTS. The main window is divided into several panes:

- Columns:** A table with columns: COLUMN_NAME, DATA_TYPE, and NULL. It lists attributes for the EMPLOYEES table, such as EMPLOYEE_ID (NUMBER(6,0)), FIRST_NAME (VARCHAR2(20 BYTE)), and DEPARTMENT_ID (NUMBER(4,0)).
- Constraints:** A table listing constraints for HR_EMPLOYEES, HR_JOBS, and HR_DEPARTMENTS. It includes primary keys (P), foreign keys (F), and unique keys (U) with their respective column names and data types.
- Data Grid:** A table showing data for the EMPLOYEES table, with columns: EMPLOYEE_ID, FIRST_NAME, LAST_NAME, and EMAIL. It lists employees like Donald OConnell, Douglas Grant, and Jennifer Whalen.

- Browse, click, work
- Create/Alter dialogs
- Generate DDL
- Copy
- Compare
- Import/Export
- Visualize referential integrity and dependencies

PL/SQL IDE

The screenshot displays the Oracle SQL Developer IDE interface. The main window shows a PL/SQL script with a loop that inserts data into a table named 'tab'. A red circle highlights the line 'tab := tab || c1;', with a callout bubble stating 'Tab is a PL/SQL table'. The debugger window is active, showing the current line of code and a condition 'len > 10'. The watch window shows a variable 'len' with a value of 11. The breakpoint window shows a list of breakpoints for the script.

Debugger Log:

```
Connecting to the database HR.  
Executing PL/SQL: ALTER SESSION SET PLSQL_DEBUG=TRUE  
Executing PL/SQL: CALL DBMS_DEBUG_DWIP.CONNECT_TCP('192.168.1.100', 4000)  
Debugger: accepted connection from database on port 4000  
Source breakpoint: DEBUG_DEMO.pls:7  
Source breakpoint: DEBUG_DEMO.pls:11
```

Debugger Window:

Condition	Enabled	Halt	Keep	Log Stack
len > 10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Watch Window:

Name	Value	Type
len	11	PLS_INTEGER

Breakpoint Window:

Name	Value	Type
TAB	VALUES + [1] = -value +	
ABV		NUMBER(6,2)
BEER	I can easily drill down into my 'tab' PL/SQL table and view the contents - w/o having to write or change any of the code that I'm debugging - I can CHANGE these values too :)	VARCHAR2(256)
BREWERY		VARCHAR2(256)
RATING		NUMBER(5,2)

- Compiler feedback
- Debugger
- Profiler
- Doc generation
- Source control
- Unit testing
- Code generation
- Code templates

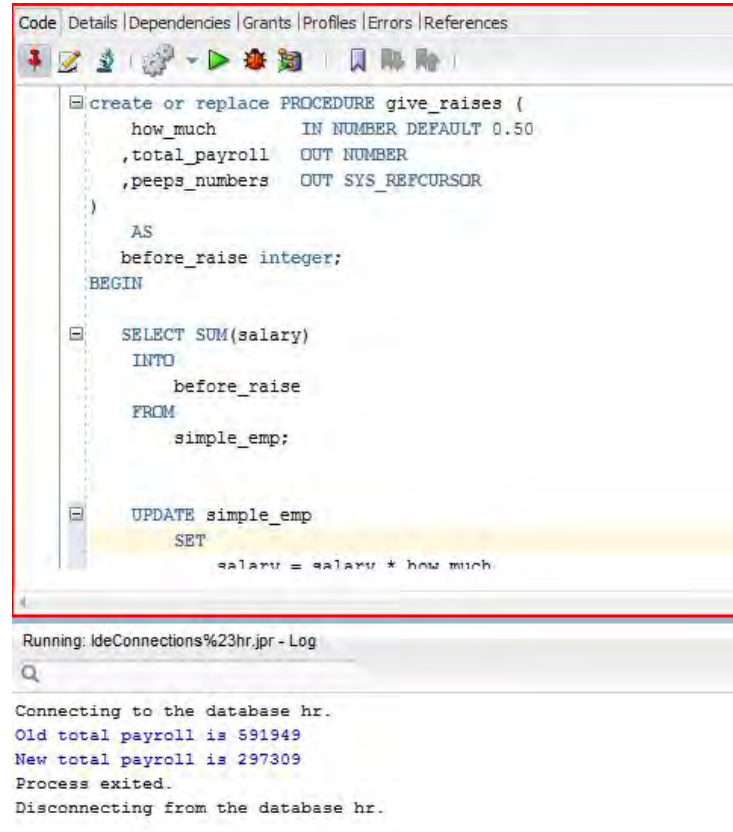


Stand Up Fight...

...or just another bug hunt?

DBMS_OUTPUT

- use the panel OR
- SET SERVEROUTPUT ON



The screenshot shows the Oracle SQL Developer interface. The main window displays a PL/SQL procedure named 'give_raises' with the following code:

```
create or replace PROCEDURE give_raises (  
    how_much          IN NUMBER DEFAULT 0.50  
    ,total_payroll    OUT NUMBER  
    ,peeps_numbers    OUT SYS_REFCURSOR  
)  
  
AS  
    before_raise integer;  
  
BEGIN  
  
    SELECT SUM(salary)  
    INTO  
        before_raise  
    FROM  
        simple_emp;  
  
    UPDATE simple_emp  
    SET  
        salary = salary * how_much
```

Below the code editor, the 'Log' panel shows the execution output:

```
Running: IdeConnections%23hr.jpr - Log  
  
Connecting to the database hr.  
Old total payroll is 591949  
New total payroll is 297309  
Process exited.  
Disconnecting from the database hr.
```

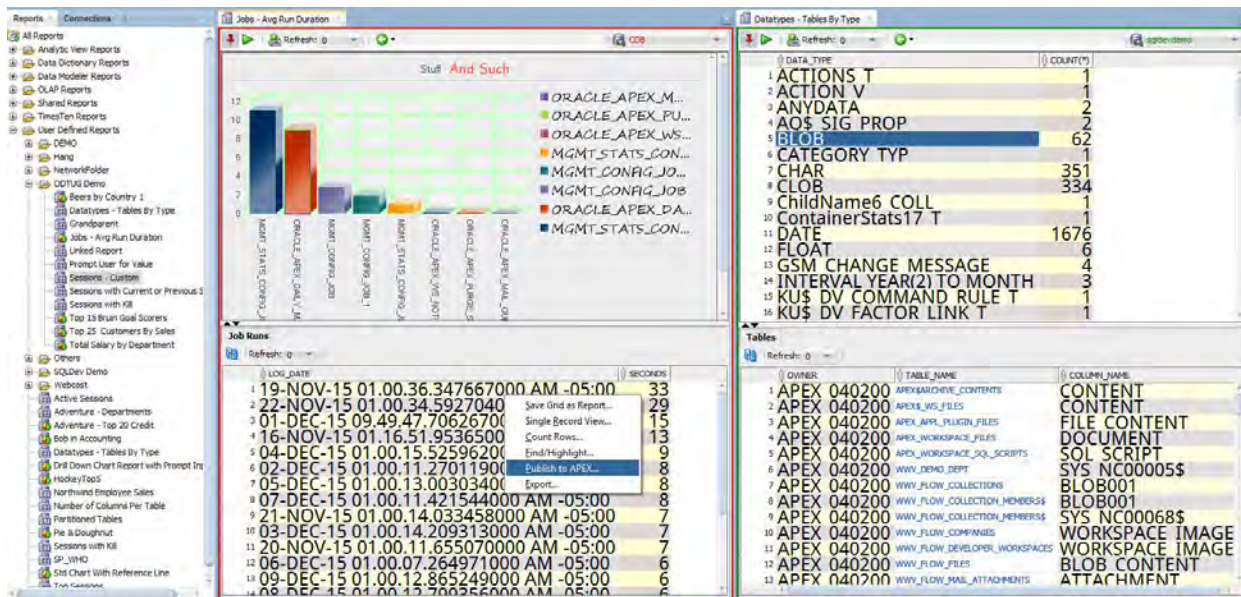

The screenshot shows the Oracle SQL Developer interface. On the left is a tree view of the database schema, including connections, tables, views, indexes, packages, procedures, functions, and triggers. The main window displays the code for a function named 'DEBUG_DEMO'. The code is as follows:

```
1 create or replace FUNCTION DEBUG_DEMO (  
2   abc IN untappd.abv%type default 0.07  
3 )  
4   RETURN Untappd.Brewery%type  
5 is  
6   retval          HR.EMPLOYEES.SALARY%TYPE;  
7   retval2         VARCHAR2 (200);  
8   transaction_date timestamp (5);  
9   X               UNTAPPD.BREWERY%TYPE := 'Trophy Brewing Company';  
10  name            UNTAPPD.NAME%TYPE;  
11  alc              UNTAPPD.ABV%TYPE;  
12  stars           UNTAPPD.RATING%TYPE;  
13  who             UNTAPPD.BREWERY%TYPE;  
14  
15  TYPE t_untappd IS TABLE OF proc_untappd_table%rowTYPE INDEX BY BINARY_INTEGER;  
16  
17  len              BINARY_INTEGER := 0;  
18  tab              t_untappd;  
19  
20  CURSOR c1  
21  IS
```

A red 'Bug' icon is positioned to the right of line 9. A red text overlay reads "hit 'Bug' to start". The line containing the assignment to 'X' is highlighted in light red.

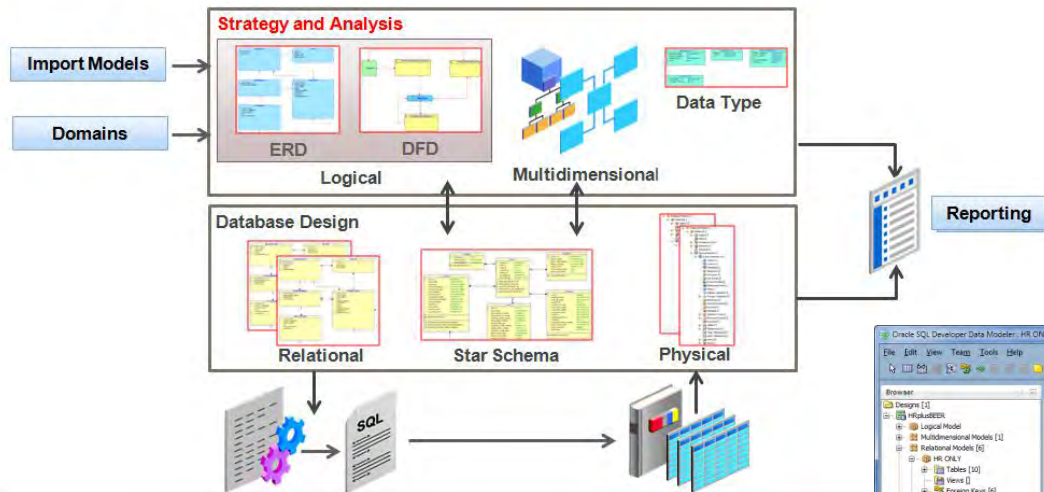
Ad Hoc Reporting

- SQL > Report
- Multi-level
- 50+ Chart types
- PDF & HTML
- Data dictionary reports included
- User Defined
- Generate HTML
- Easily share with others



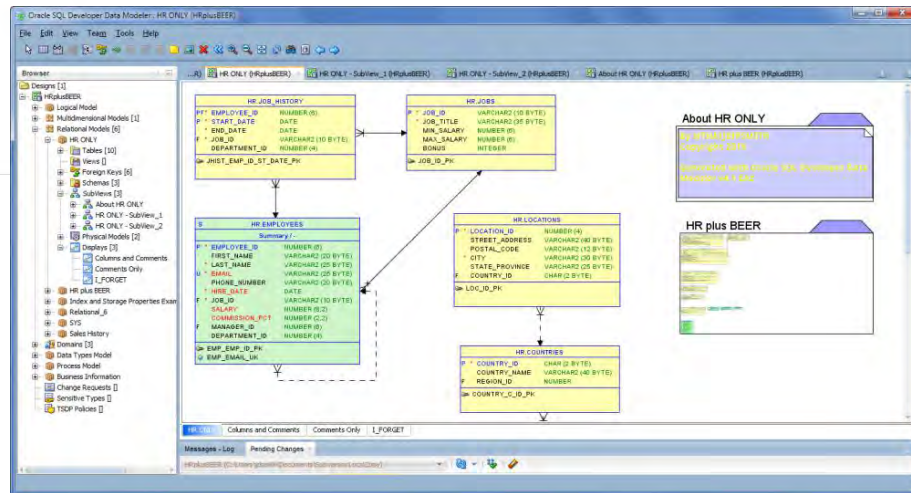
SQL Developer Data Modeler

Included for free, also available as a separate download/program

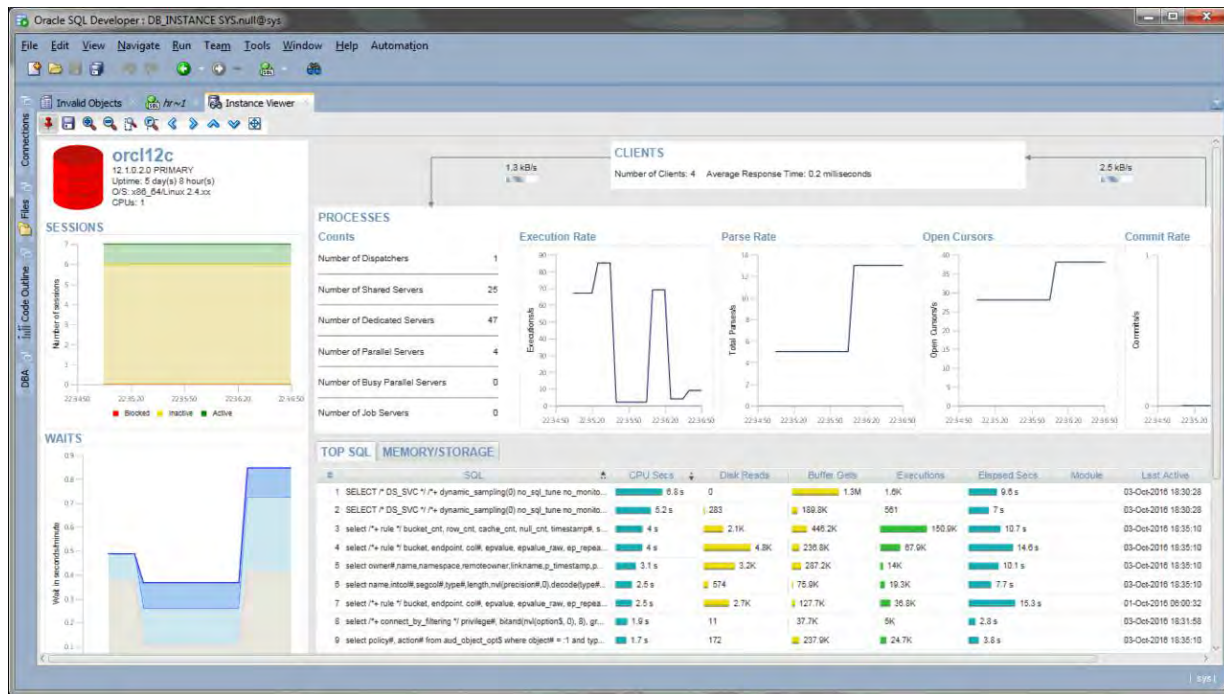


- Import data dictionaries
- Print Diagrams
- Compare
- Generate DDL
- Reporting

- Custom Scripting
- Versioning
- Good for team & individuals

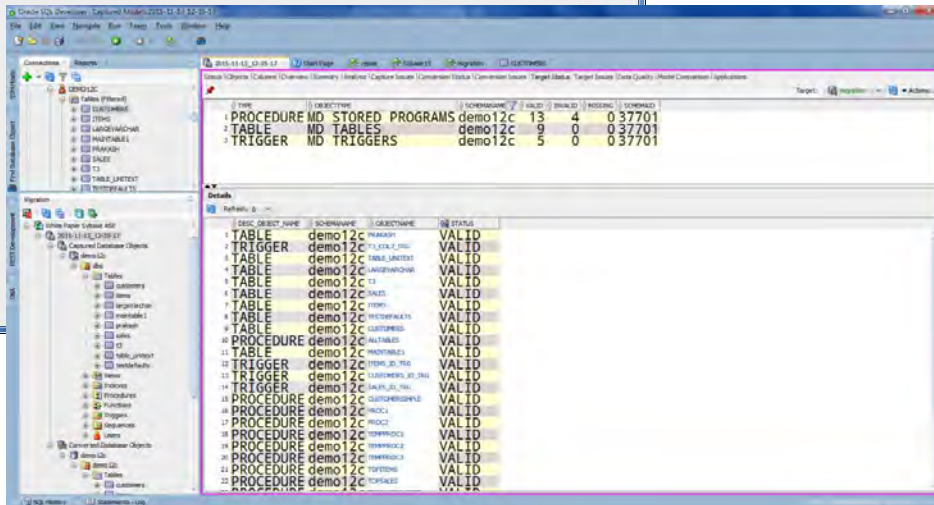
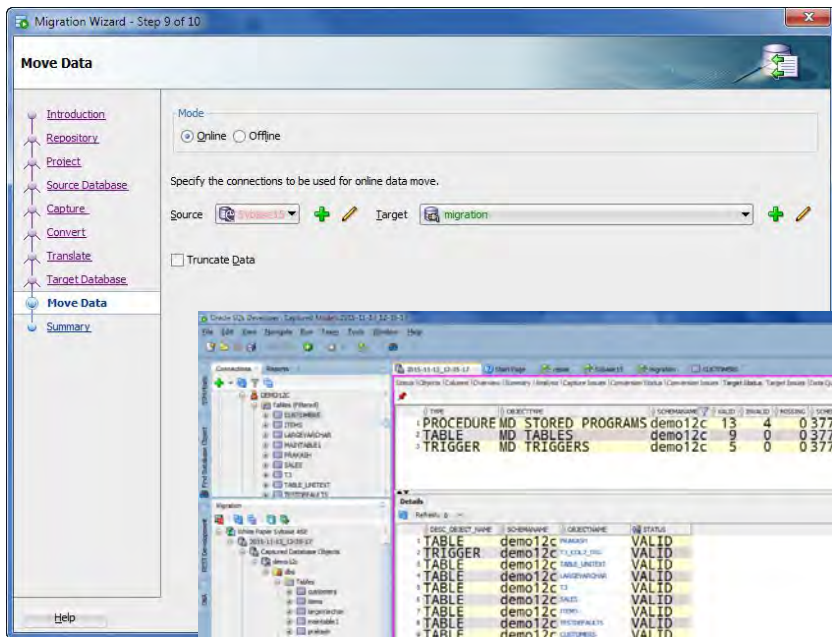


Database Administration



- Configuration
- Security
- Storage
- RMAN
- Resource Manager
- Performance
- Multitenant
- Move PDB to Cloud

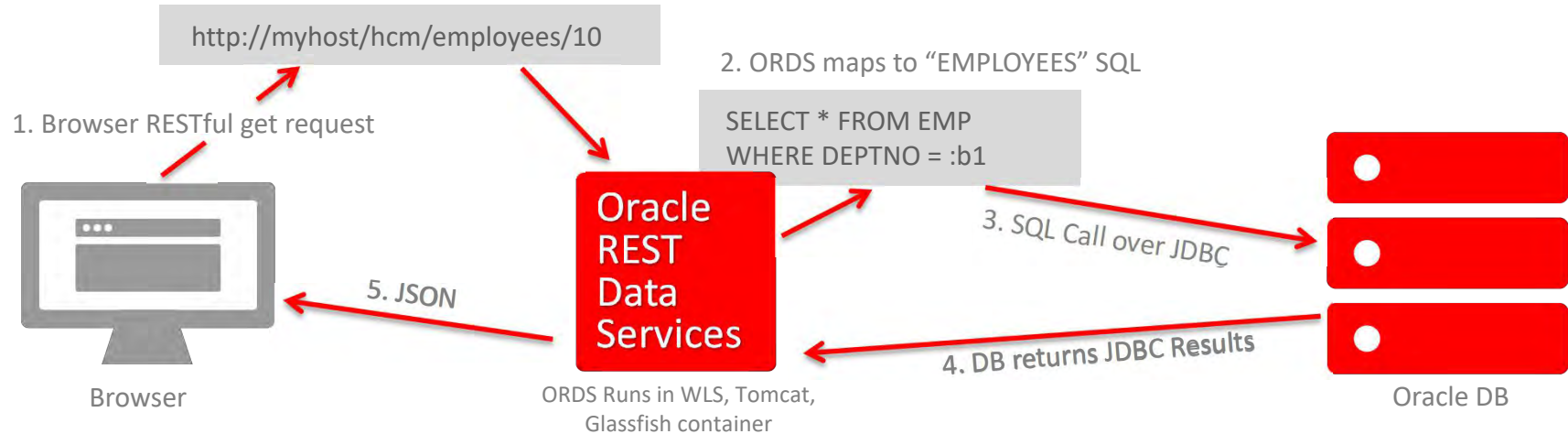
3rd Party RDBMS Migrations to Oracle



- DB2, SQL Server, Sybase ASE, Teradata
- Wizard-driven process
- Captures & converts data model
- Move data
- Translates T-SQL

Oracle REST Data Services Support

RESTful access to relational data returned in JSON format



- Maps HTTP(S) requests to SQL and transforms results to JSON, CSV, Binary
- GUI installer, administration, and RESTful services development via SQL Developer
- Auto-REST (CRUD) enable Tables & Views & Stored Procedure support on the way

Oracle REST Data Services Support

- Install, config, run
- REST enable/secure DB resources
- Dev & Deploy RESTful Services
- Export Services via PL/SQL API

The screenshot displays the Oracle SQL Developer interface. On the left, the 'REST Data Services' tree is expanded to show a 'POST' method for the 'AddEmp' service. The 'Tools' menu is open, with 'REST Data Services' selected, showing options like 'Run...', 'Install...', and 'Uninstall...'. The main window shows the REST client configuration for the 'POST AddGetEmp' service, with the URL 'http://localhost:8888/ords/peeps/rpc/AddGetEmp' and the request body 'EMP_NAME: 'Ric', EMP_SALARY: '10000''. The 'HTTP Response' pane shows a successful response: 'Status: HTTP/1.1 201 Created' and a JSON body containing employee details: 'NumOfEmps': 29, 'EMP': [{ 'id': 83, 'name': 'Ric', 'salary': 10000 }].

Oracle SQLcl

SQLFORMAT: ANSICONSOLE

@thatjeffsmith



@oraclesqlcl

<http://www.thatjeffsmith>

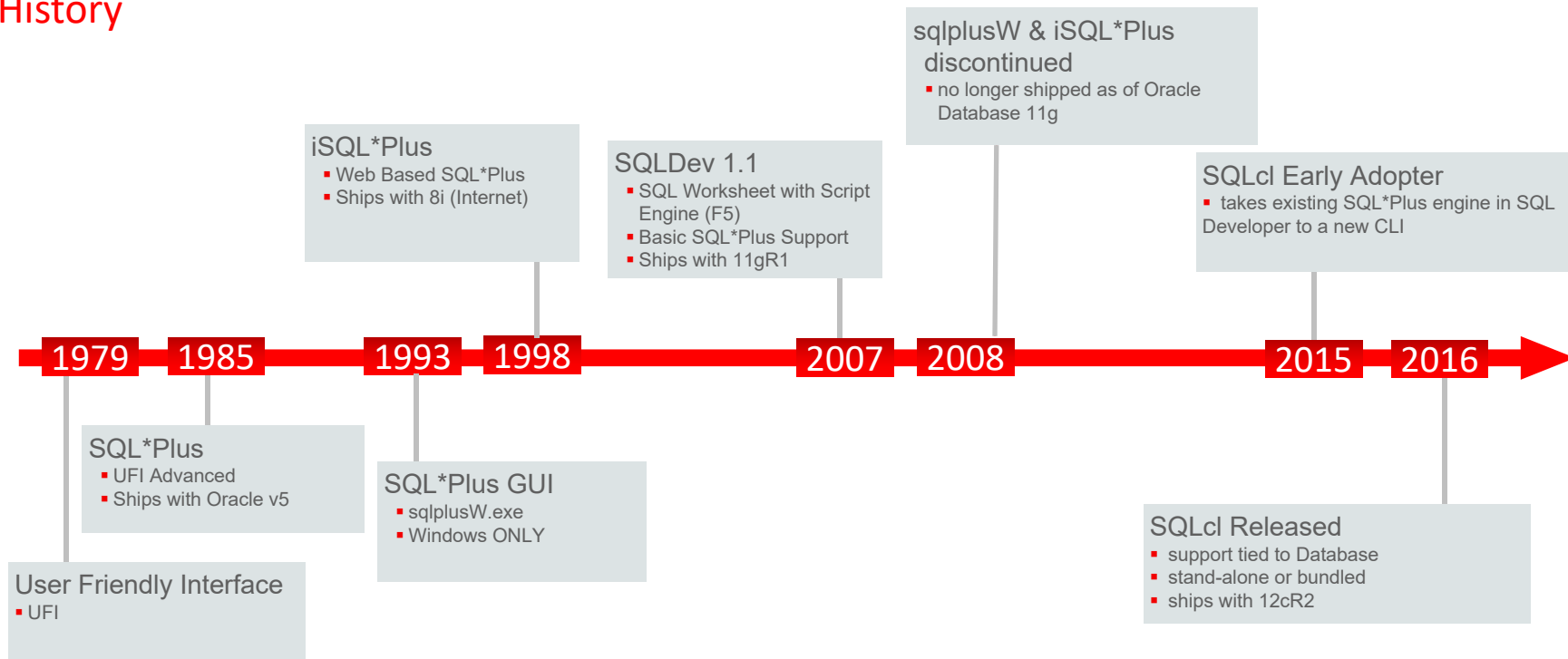


It's a UNIX system!

I know this...

Oracle SQL Tools

History



Hot Technology from 1985



Merkur XR4Ti

Other Popular Things from 1985

- The Goonies
- MacGyver
- Wake Me Up Before You Go-Go
- **SQL*Plus**, replaces User Friendly Interface (UFI)

Command Line Interface (SQLcl)

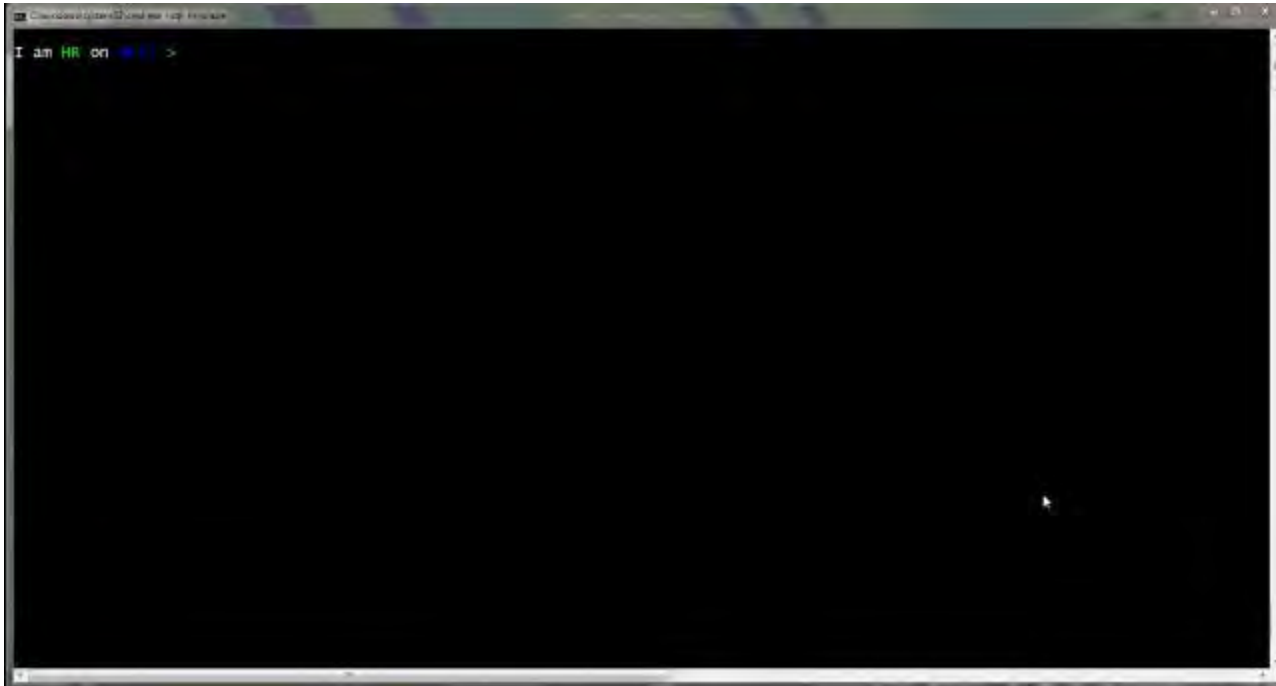
- 15 MB download
- No client required
- Built in editor
- Automatic formatting
- Full SQL*Plus support
- SQL History
- Object name completion
- New commands e.g. CTAS, DDL, SSSHUNNEL, History
- Client-side javascript

```
SQL> info sh.sales
TABLE: SALES
      LAST ANALYZED:2014-12-13 06:01:41.0
      ROWS           :918843
      SAMPLE SIZE    :918843
      INMEMORY       :
      COMMENTS       :facts table, without a primary key; all rows are uniquely identified by the combination of all foreign keys

Columns
NAME      DATA TYPE  NULL  DEFAULT  COMMENTS
-----
PROD_ID   NUMBER      No              FK to the products dimension table
CUST_ID   NUMBER      No              FK to the customers dimension table
TIME_ID   DATE        No              FK to the times dimension table
CHANNEL_ID NUMBER      No              FK to the channels dimension table
PROMO_ID  NUMBER      No              promotion identifier, without FK constraint (intentionally) to show outer join optimization
QUANTITY_SOLD NUMBER(10,2) No              product quantity sold with the transaction
AMOUNT_SOLD NUMBER(10,2) No              invoiced amount to the customer

Indexes
INDEX NAME      UNIQUENESS  STATUS  FUNCIDX STATUS  COLUMNS      COLUMN EXPRESSION
-----
SH_SALES_CUST_BIX  NONUNIQUE  N/A          CUST_ID
SH_SALES_PROD_BIX  NONUNIQUE  N/A          PROD_ID
SH_SALES_TIME_BIX  NONUNIQUE  N/A          TIME_ID
SH_SALES_PROMO_BIX  NONUNIQUE  N/A          PROMO_ID
SH_SALES_CHANNEL_BIX  NONUNIQUE  N/A          CHANNEL_ID

SQL>
```





A screenshot of a terminal window. The title bar at the top reads "Client: windows12.umd.edu:1001 - Oracle". The terminal content shows the text "I am HR on" in green, followed by a blue cursor and a greater-than sign ">". The rest of the terminal is black.

A New JDBC Driver for Oracle, and SQLcl Supports it!

Oracle REST Data Services 17.3 Beta

Version 17.3.0.248.08.45, Updated September 6, 2017

[Readme](#), [Release Notes and Installation](#), [Forum](#)

Oracle REST Data Services	50 MB	Download	
Oracle REST Data Services JDBC driver	336 KB	Download	

Speak JDBC via HTTP – Courtesy Oracle REST Data Services

Connect (DB Auth Supported)

```
I am on > connect HR/oracle@jdbc:oracle:orest:@http://localhost:8888/ords/hr/
Connected.

Session altered.
```

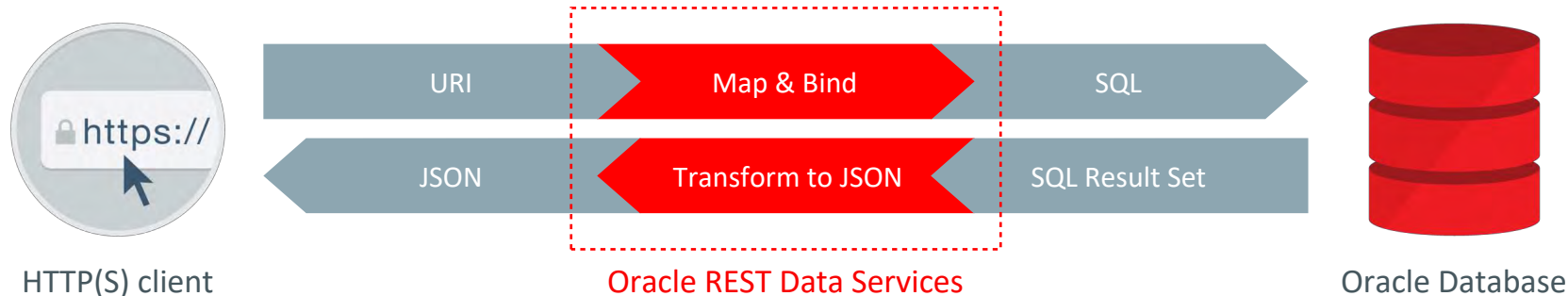
DB user/pwd invoke REST driver ORDS URI/<REST enabled schema>

Run Stuff!

```
I am HR on jdbc:oracle:orest:@http://localhost:8888/ords/hr/ > select max(salary), department_id
2 from hr.employees
3 group by department_id
4 order by 1 desc
5 fetch first 2 rows only;
MAX(SALARY) DEPARTMENT_ID
24000 90
14000 80

I am HR on jdbc:oracle:orest:@http://localhost:8888/ords/hr/ > _
```


How It Works



- We support POST on a /sql/ endpoint – will execute SQL, scripts, even some SQL*Plus/SQLcl commands
- We build a JDBC driver that ‘speaks’ REST

But, Why?

- We needed it for SQLDev Web (SQL Worksheet – ad hoc SQL)
- Access Data remotely, no need for Oracle NET (APEX?)
- Alternative to DB_LINKs

The screenshot shows the Oracle SQL Developer interface. The top menu bar includes 'ORACLE SQL Developer', 'Home', 'Worksheet', 'DBA', and 'Data Modeler'. The breadcrumb trail is 'sdw / C#DBAAS_MONITOR'. The left sidebar shows a 'Navigator' pane with 'Worksheets' and a tree view of the 'C#DBAAS_MONITOR' schema, including tables like 'ADHOC_TABLE_DATE', 'ADHOC_TABLE_SIMPLE', 'COUNTRIES', 'DEPARTMENTS', 'EMPLOYEES', 'JOBS', 'JOB_HISTORY', 'KRIS_TEST1', 'LOCATIONS', 'OSDDMW_DIAGRAMS', 'REGIONS', 'SHOW_OFF', 'SQLDEV_JOBS', 'SQLDEV_JOB_FILES', 'STATS', and 'UNTAPPD'. The main workspace shows a SQL worksheet with the following query:

```
1 select * from untappd
2 where
```

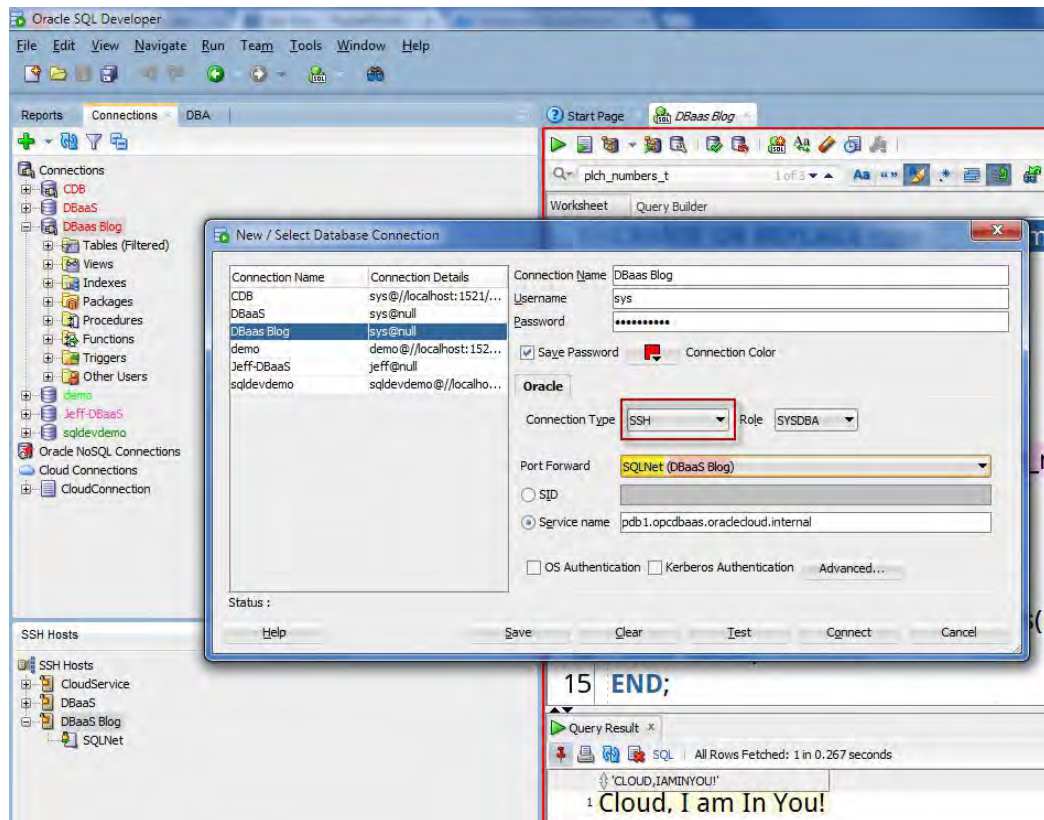
A dropdown menu is open over the 'where' clause, listing columns: BEER, BEER_URL, BREWERY, BREWERY_CITY, BREWERY_COUNTRY, BREWERY_STATE, BREWERY_URL, CHECKED_URL, and CITY. Below the query editor, the 'Query Result' pane displays a table with 9 rows and 9 columns: BEER, BREWERY, STYLE, ABV, IBU, COMMENTS, LOCATION, and CITY. The data is as follows:

	BEER	BREWERY	STYLE	ABV	IBU	COMMENTS	LOCATION	CITY
1	Devil's Tramping Grou	Aviator Brewing Comp	Belgian Tripel		9.2	31 (null)	Mellow Mushroom	Cary
2	Palate Wrecker	Green Flash Brewing	IPA - Imperial / Double		9.5	149 Upgrading to 5-star st	(null)	(null)
3	Devil's Tramping Grou	Aviator Brewing Comp	Belgian Tripel		9.2	31 (null)	(null)	(null)
4	Pitch Black IPA	Widmer Brothers Brew	IPA - Black / Cascadia		6.5	65 (null)	(null)	(null)
5	90 Minute IPA	Dogfish Head Craft Br	IPA - Imperial / Double		9	90 (null)	(null)	(null)
6	Pitch Black IPA	Widmer Brothers Brew	IPA - Black / Cascadia		6.5	65 All Out Of Bourbon, T	(null)	(null)
7	90 Minute IPA	Dogfish Head Craft Br	IPA - Imperial / Double		9	90 My Reward	(null)	(null)
8	Victory at Sea	Ballast Point Brewing	Porter - Imperial / Dou		10	60 (null)	The Raleigh Times Ba	Raleigh
9	Abt 12	Brouwerij St. Bernard	Belgian Quad		10	22. THIS One Is For Greg	The Raleigh Times Ba	Raleigh

The status bar at the bottom indicates '12:14:31 PM - REST call resolved successfully.' The Oracle logo is visible in the bottom left corner.

Oracle Cloud Support

- Schema Service
- DBaaS
 - Integrated SSH
 - 100% feature support
 - EZ PDB to Cloud
- Exadata Express
- Bare Metal
- Data Warehouse *coming soon*



I Have NOTHING Installed



- Have never installed Oracle
- Zero years experience – DBA
- Java, what?
- I DO have a browser and a credit card

SQL Developer, On the Web

- Runs out of Oracle REST Data Services (ORDS)
- Oracle Database Cloud Services
- All HTML5/JS
- Version One:
 - Fully Functional SQL Worksheet
 - Relational Diagrams for your database objects
 - Real Time SQL Monitoring
 - DBA 'Stuff' ~ Alert Logs, Storage, DB Activity, PDB Magementment

SQL Developer, In Your Browser

Oracle SQL Developer interface showing a query result for the table `untappd`. The query is:

```
1 select * from untappd
2 where
```

The result set contains the following data:

ID	BEER	BREWERY	STYLE	ABV	IBU	COMMENTS	LOCATION	CITY
1	Devil's Tramping Grou	Aviator Brewing Comp	Belgian Tripel	9.2	31	(null)	Mellow Mushroom	Cary
2	Palate Wrecker	Green Flash Brewing	IPA - Imperial / Double	9.5	149	Upgrading to 5-star st:	(null)	(null)
3	Devil's Tramping Grou	Aviator Brewing Comp	Belgian Tripel	9.2	31	(null)	(null)	(null)
4	Pitch Black IPA	Widmer Brothers Brew	IPA - Black / Cascadia	6.5	65	(null)	(null)	(null)
5	90 Minute IPA	Dogfish Head Craft Br	IPA - Imperial / Double	9	90	(null)	(null)	(null)
6	Pitch Black IPA	Widmer Brothers Brew	IPA - Black / Cascadia	6.5	65	All OuT Of Bourbon, T	(null)	(null)
7	90 Minute IPA	Dogfish Head Craft Br	IPA - Imperial / Double	9	90	My Reward!	(null)	(null)
8	Victory at Sea	Ballast Point Brewing	Porter - Imperial / Dou	10	60	(null)	The Raleigh Times Ba	Raleigh
9	Abt 12	Brouwerij St. Bernard	Belgian Quad	10	22	This One Is For Greg	The Raleigh Times Ba	Raleigh
10	Devil's Tramping Grou	Aviator Brewing Comp	Belgian Tripel	9.2	31	(null)	(null)	(null)

SQL Developer SQL Worksheet Features

- Run SQL & PL/SQL
- Explain Plans & DBMS_OUTPUT
- Recover worksheets/code from prior sessions
- SQL History/Recall
- Code Insight
- Formatting and Code Parser/Error Highlighting
- Script & Query Output (text vs grid)
- Grid Exports
- Drag and Drop Code Generation AND MORE!

C##SDW

Tables

Search...

- ▶ A1
- ▶ BAR
- ▶ DATE_RELATED_TESTS
- ▶ DEPT
- ▶ EMP
- ▶ EMP_COPY
- ▶ EMP_COPY2
- ▶ FKTEST1
- ▶ FKTEST2
- ▶ FOO
- ▶ K1
- ▶ KLR1
- ▶ OSDDMW_DIAGRAMS
- ▶ T1
- ▶ TEST_1
- ▶ TEST_TABLE
- ▶ TT
- ▶ TTT
- ▶ TestMix

Worksheet*

```

1 SELECT
2   id,
3   name,
4   description,
5   last_update,
6   global_id,
7   design_id,
8   design_name bad,
9   model_id,
10  model_name,
    
```

Autotrace

Query Result Script Output DBMS Output Explain Plan Autotrace SQL History



OPERATION	OBJECT_NAME	OBJECT_TYPE	CARDINALITY	COST	PARTITION
SELECT STATEMENT			13	3	
TABLE ACCESS	OSDDMW_DIAGRAMS	TABLE	13	3	

	NAME	VALUE
1	physical reads	2
2	logical read bytes fro	81920
3	Requests to/from clie	120
4	opened cursors cuml	3
5	physical read IO reau	2



```

1 SELECT
2   id,
3   name,
4   description,
5   last_update,
6   global_id,
7   design_id,
8   design_name bad,
9   model_id,
10  model_name,

```

Statement	Last Exec	Exec #
select * from emp where empno in (select distinct empno from emp_copy) order by sal desc fetch first 5 rows only	11/28/2016, 2:20:14 PM	2
select * from emp where empno not in (select distinct empno from emp_copy) order by sal desc fetch first 5 rows only	11/28/2016, 2:14:29 PM	1
select * from emp	11/28/2016, 2:10:53 PM	6
SELECT empno, hiredate, sal FROM c##sdw.emp select deptno, floor(avg(sal)) from emp group by deptno order by 2 desc fetch first 5 rows only	11/14/2016, 11:26:51 AM	1
select deptno, floor(avg(sal)) from emp group by deptno order by 2 desc fetch first 5 rows only	11/4/2016, 11:17:57 AM	1

C##SDW

Packages

Search...

EBA_OTB

(x) TEST_STATU

(x) TEST_STATU

(x) TEST_STATU

(x) TEST_STATU

f_x F_TEST_STA

f_x F_TEST_STA

f_x F_TEST_STA

f_x F_TEST_STA

(x) QUESTION_T

(x) QUESTION_T

(x) SCORE_MOD

(x) SCORE_MOD

(x) SCORE_MOD

(x) SCORE_MOD

f_x CREATE_TEST

f_x CREATE_QUESTION

f_x CREATE_QUESTION

f_x CREATE_ANSWER

f_x CREATE_ANSWER

F_TEST_STATUS_AVAILABLE

F_TEST_STATUS_OPEN

F_TEST_STATUS_FINISHED

F_TEST_STATUS_UNAVAILABLE

CREATE_TEST

CREATE_QUESTION

CREATE_QUESTION

CREATE_ANSWER

P_USERNAME

P_PASSWORD

P_TITLE

P_DESCRIPTION

P_TIME_LIMIT

P_AVAILABLE_FROM

P_AVAILABLE_UI

```

10   l_p_created_by
11   BEGIN
12     l_return_value :=
13       p_username
14       p_password
15       p_title

```

December 2016

S	M	T	W	T	F	S
					1	2
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Today

Insert code into worksheet Cancel

```

select * from emp where empno in (select distinct
select * from emp where empno not in (select dist
select * from emp

```



Diagram Your Objects

oracle.com:8080/ords/sdw_sdww/?nav=modeler&modeler=%7B%22id%3A3%7D

ORACLE SQL Developer Home Worksheet DBA Modeler sdw / C##SDW

C##SDW
Tables
Search...

A1
BAR
DATE_RELATED_TESTS
DEPT
EMP
EMP_COPY
EMP_COPY2
FOO
K1
KLR1
OSDDMW_DIAGRAMS
T1
TEST_TABLE

```

    erDiagram
        DWTESTCOUNTRIES_LUR ||--o{ DWTESTDEPARTMENTS : "has"
        DWTESTDEPARTMENTS ||--o{ DWTESTEMPLOYEES : "has"
        DWTESTDEPARTMENTS ||--o{ DWTESTJOB_HISTORY : "has"
        DWTESTEMPLOYEES ||--o{ DWTESTJOB : "has"
        DWTESTEMPLOYEES ||--o{ DWTESTEMPLOYEE_DETAILS_VIEW : "has"
        DWTESTEMPLOYEES ||--o{ DWTESTEMPLOYEE_DETAILS_VIEW_PK : "has"
        DWTESTJOB_HISTORY ||--o{ DWTESTJOB : "has"
        DWTESTJOB ||--o{ DWTESTEMPLOYEE_DETAILS_VIEW : "has"
        DWTESTEMPLOYEE_DETAILS_VIEW ||--o{ DWTESTEMPLOYEE_DETAILS_VIEW_PK : "has"
        DWTESTEMPLOYEE_DETAILS_VIEW ||--o{ DWTESTEMPLOYEE_DETAILS_VIEW_TEST_PK : "has"
    
```

DWTESTCOUNTRIES_LUR
 EMPLOYEE_ID NUMBER(9)
 COUNTRY_CODE VARCHAR2(3)
 EMPLOYEE_NAME VARCHAR2(40)
 EMPLOYEE_NUMBER NUMBER

DWTESTDEPARTMENTS
 DEPARTMENT_ID NUMBER(4)
 DEPARTMENT_NAME VARCHAR2(30)
 MANAGER_ID NUMBER(9)
 LOCATION_ID NUMBER(4)
 EMPLOYEE_ID NUMBER(9)
 JOB_TITLE VARCHAR2(35)

DWTESTEMPLOYEES
 EMPLOYEE_ID NUMBER(9)
 FIRST_NAME VARCHAR2(20)
 LAST_NAME VARCHAR2(25)
 EMAIL VARCHAR2(25)
 PHONE_NUMBER VARCHAR2(20)
 PHOTO_ID VARCHAR2(10)
 SALARY NUMBER(8,2)
 COMMISSION_PCT NUMBER(2,2)
 MANAGER_ID NUMBER(9)
 EMPLOYEE_NAME VARCHAR2(40)
 STATE VARCHAR2(30)
 CITY VARCHAR2(30)
 STATE_FINDER VARCHAR2(40)
 COUNTRY_NAME VARCHAR2(40)
 DELIVERY_ADDRESS VARCHAR2(255)

DWTESTJOB_HISTORY
 EMPLOYEE_ID NUMBER(9)
 DEPARTMENT_ID NUMBER(4)
 JOB_ID NUMBER(4)
 START_DATE DATE
 END_DATE DATE
 SALARY NUMBER(8,2)
 EMPLOYEE_NAME VARCHAR2(40)

DWTESTJOB
 EMPLOYEE_ID NUMBER(9)
 DEPARTMENT_ID NUMBER(4)
 JOB_ID NUMBER(4)
 START_DATE DATE
 END_DATE DATE
 SALARY NUMBER(8,2)
 EMPLOYEE_NAME VARCHAR2(40)

DWTESTEMPLOYEE_DETAILS_VIEW
 EMPLOYEE_ID NUMBER(9)
 FIRST_NAME VARCHAR2(20)
 LAST_NAME VARCHAR2(25)
 EMAIL VARCHAR2(25)
 PHONE_NUMBER VARCHAR2(20)
 PHOTO_ID VARCHAR2(10)
 SALARY NUMBER(8,2)
 COMMISSION_PCT NUMBER(2,2)
 MANAGER_ID NUMBER(9)
 EMPLOYEE_NAME VARCHAR2(40)

DWTESTEMPLOYEE_DETAILS_VIEW_PK
 EMPLOYEE_ID NUMBER(9)
 DEPARTMENT_ID NUMBER(4)
 JOB_ID NUMBER(4)

DWTESTEMPLOYEE_DETAILS_VIEW_TEST_PK
 EMPLOYEE_ID NUMBER(9)
 DEPARTMENT_ID NUMBER(4)
 JOB_ID NUMBER(4)

DWTESTEMPLOYEE_DETAILS_VIEW_TEST_PK
 EMPLOYEE_ID NUMBER(9)
 DEPARTMENT_ID NUMBER(4)
 JOB_ID NUMBER(4)

GENERAL
 Name: MV_EMP_DETAILS_VIEW
 Schema: DMWTEST
 External Table:

COLUMNS

PRIMARY KEY

UNIQUE CONSTRAINTS
 Name: MV_EMP_DETAILS_VIEW_TEST_PK

INDEXES

FOREIGN KEYS

COMMENTS

FORMAT

SQL Developer Data Modeling v1 Features

- Create any combination of objects
- Create one or more diagrams
 - preview diagrams
 - search diagrams
- View all metadata/properties of object
- Generate DDL