

*Martin B. Nielsen, MBNDATA*

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## DOUG November 2018

Latest news about building and  
supporting web applications with Oracle  
Application Express (APEX) 18.2

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DOUG, Ballerup, 2018



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# APEX Full Stack Developer

Vi bygger software løsninger, yder konsulentbistand og underviser indenfor Oracle og APEX.

IT Konsulentbistand

APEX Kursus

Productivity Apps

Built with ā'pěks

DOAG Conference & Exhibition 2017

ORACLE Certified Expert Oracle Database SQL

ORACLE Certified Associate PL/SQL Developer

ORACLE Certified Expert Oracle Application Express Developer

(c) MBNDATA, 2017. CVR-nr.: 19 76 85 46 Set Screen Reader Mode On

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ORACLE APEX SPECIALISTERNE



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# Whats Happening and hot with APEX ?

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- APEX version 18 (minor version 1 and 2) **new features**
- Remote Data Sources using ORDS and REST (with JSON)
- Sqlcl 18.3 (SQL command line tool)
- Progressive Web Apps (**PWA**) developed in APEX
- Oracle 18 XE Database (newly released)
- Oracle **Cloud** (first trip to the cloud)



# APEX Whats all the fuss about ?

**Build stunning, scalable apps. Fast.**

Oracle Application Express (APEX) is a low-code development platform that enables you to build stunning, scalable, secure apps, with world-class features, that can be deployed anywhere.

## Low Code Development

With Oracle APEX and low code, your organization can be more agile - develop solutions faster, for less cost, and with greater consistency. You can adapt to changing requirements with ease. Empower professional developers and everyone else in your organization to be a part of the solution.

**Vibrant Community**



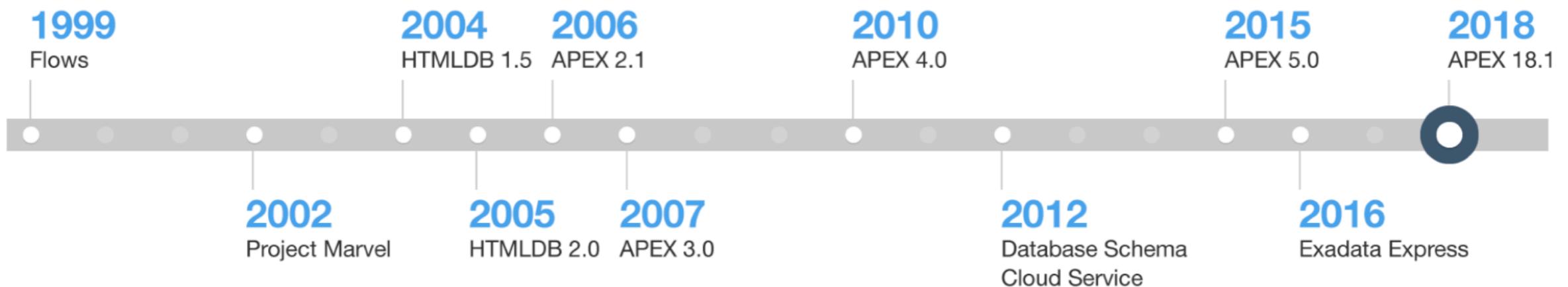
# APEX History

## Oracle APEX Turns 18 🎉

The upcoming release of Oracle APEX will be APEX 18.1, consistent with the release numbering for the Oracle Database as well as Oracle REST Data Services and Oracle Cloud services.

Coincidentally, it has been a little over 18 years since the first line of code was written for APEX. Throughout this time, we have always strived to empower developers with the tools they need to build modern apps fast, with less effort, and with greater consistency.

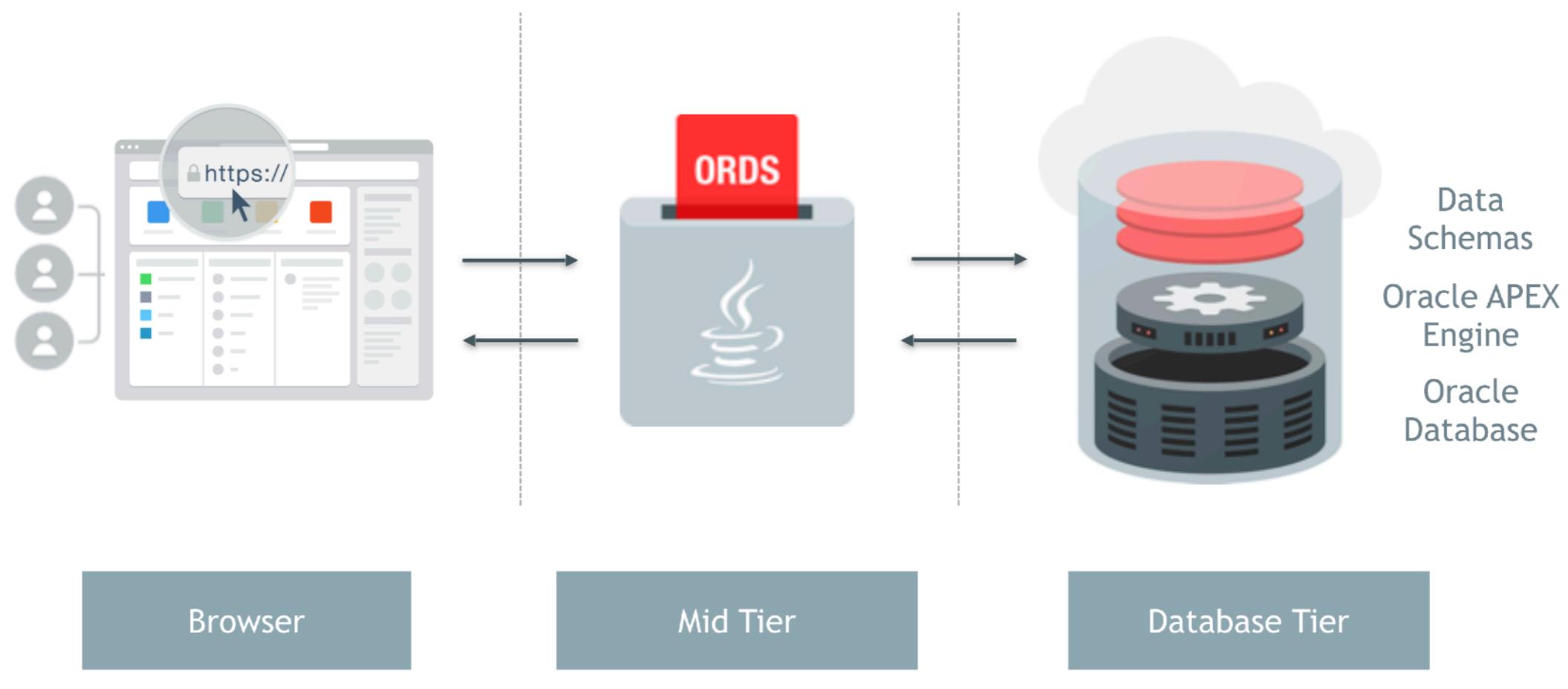
Oracle APEX has an incredible legacy and an even brighter future! [#LetsWreckThisTogether](#)



# APEX Architecture

## Oracle Application Express

3 Tier Architecture



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# APEX 18 Major New features

★ REST Enabled SQL support & Service consumption



- ★ Create App Wizard (Blueprint/LowCode)
- ★ Oracle JET Upgrade to latest version (4.2)

Social Login (Google, Facebook, OAuth2...)

Quick SQL

Page Designer Improvements

Font APEX and many other things...



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# APEX 18 ALL new features

## REST Enabled SQL Support

- Create and maintain References to REST Enabled SQL Instances (Oracle REST Data Services) in Shared Components
- Use a REST Enabled SQL Service and therefore a remote Oracle database as the Data Source for the following components: Classic Reports, Interactive Reports, CSS Calendar, JET Charts, Tree Region, Toggle Column Report, and Reflow Table Report
- Execute PL/SQL page processes on a remote Oracle database
- Use the APEX\_EXEC PL/SQL package to execute SQL Queries or PL/SQL blocks on a remote database, from within your custom PL/SQL code.
- Caching for REST Enabled SQL: Session based, user based or for all users and sessions. Cache invalidation can be specified in minutes or with a DBMS\_SCHEDULER calendaring syntax.



## REST Service Consumption

- Create and maintain references to REST services (Web Source Modules) within Shared Components
- Leverage Oracle REST Data Services features like server-side filtering or pagination to fetch only required data from the REST service
- Use Simple HTTP for generic REST services, JSON or XML data feeds
- Have Application Express automatically discover and maintain the Data Profile; no manual SQL or PL/SQL coding is required for JSON or XML parsing
- Use Web Sources as the data source for the following components: Classic Reports, Interactive Reports, CSS Calendar, JET Charts, Tree Region, Toggle Column Report, and Reflow Table Report



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# APEX 18

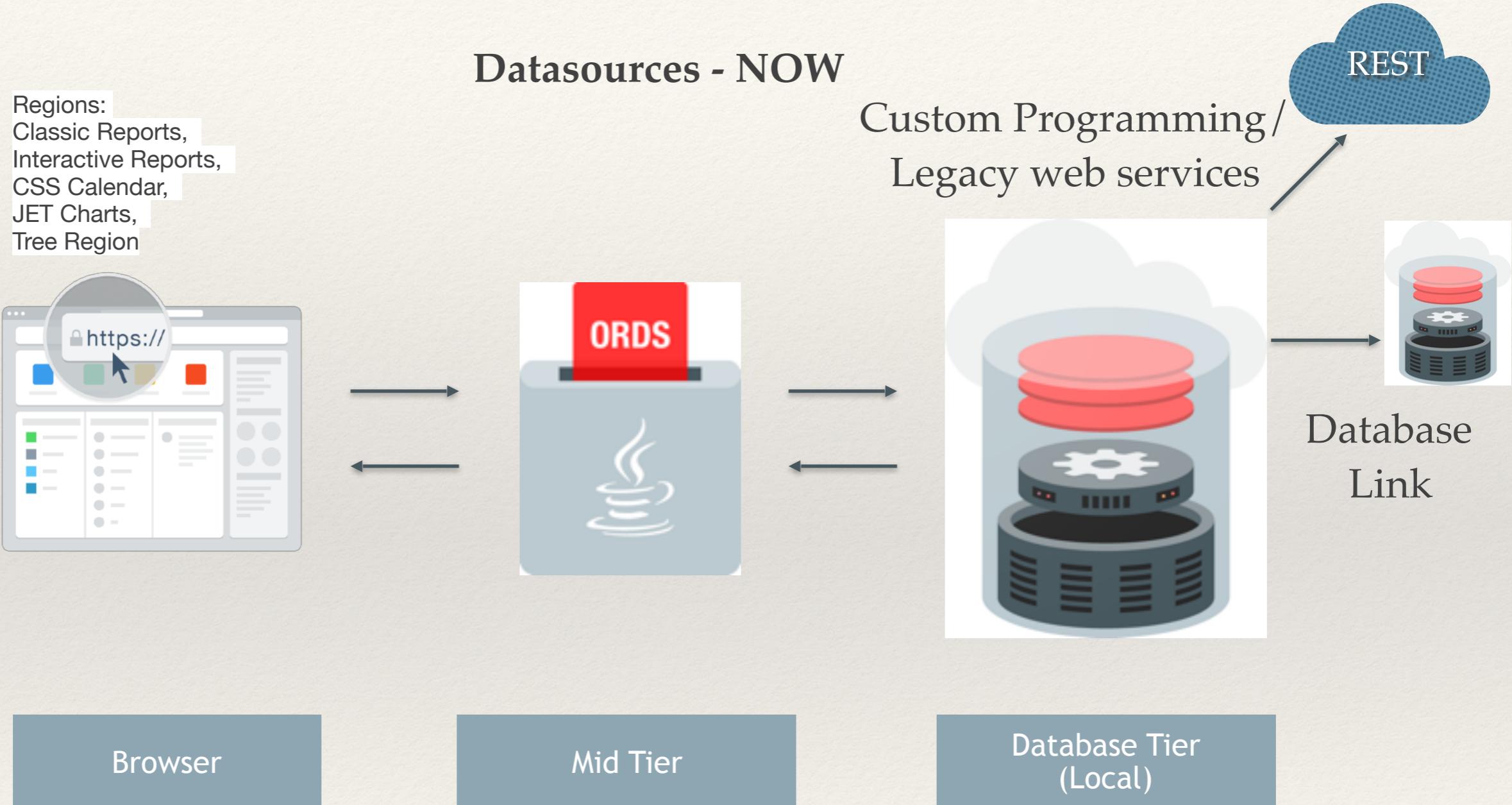
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## DEMO

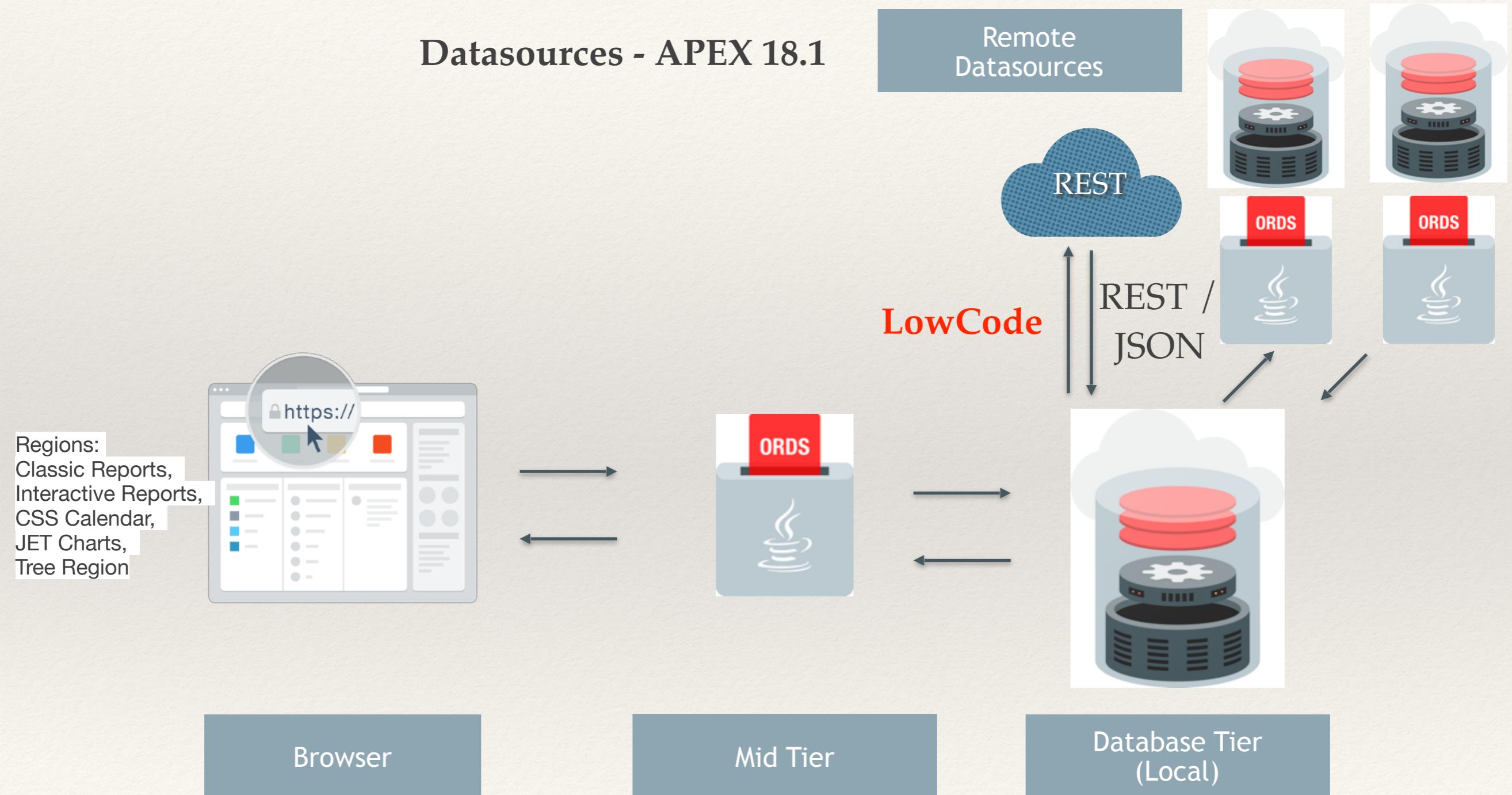
*How to provision a new development workspace, create a database schema and table space, and create a feature rich web application (including underlying datamodel), user feedback, Configurations options for users... in less than 5 minutes.*



# APEX 18 REST features



# APEX 18 REST features



# APEX 18 REST datasources

Calendar

Chart

Classic Report

Tree

Interactive Report

## Create Page

Source

Data Source  
✓ REST Enabled SQL Service  
Web Source

REST Enabled SQL Service  
MBNDATA REST\_PUBLIC

\* Source Type  Table  SQL Query

\* Table / View Owner Current Schema

\* Table / View Name - Select Table or View -

\* Select Columns

Next >



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# APEX 18 JET 4.2 Integration

Welcome to Oracle JET

Oracle JavaScript Extension Toolkit (JET) empowers developers by providing a modular open source toolkit based on modern JavaScript, CSS3 and HTML5 design and development principles.

Get Started   Try Demo   Use Cookbook  
Download and Install   FixItFast App   Components Recipes

JET v4.2.0 Release Notes  
v4.2.0 (12 February 2018)

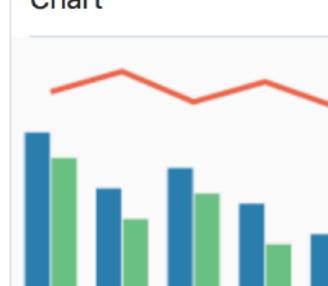
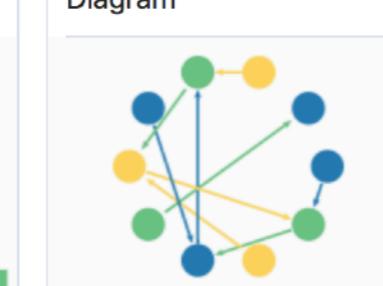
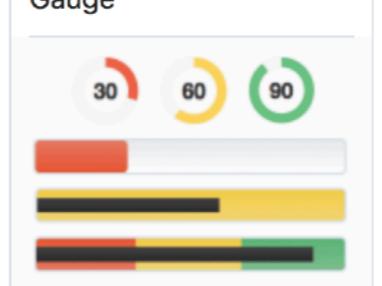
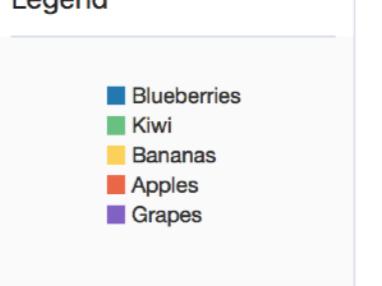
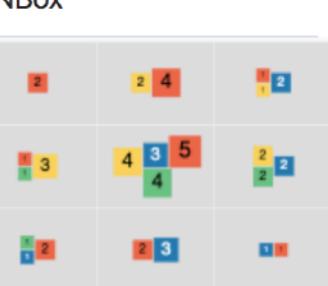
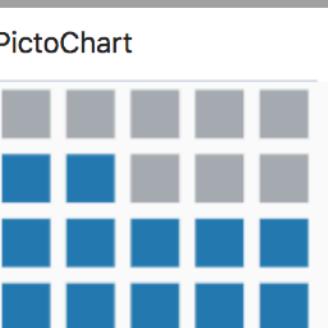
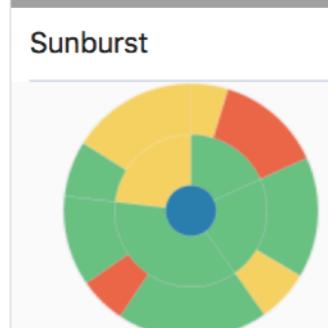
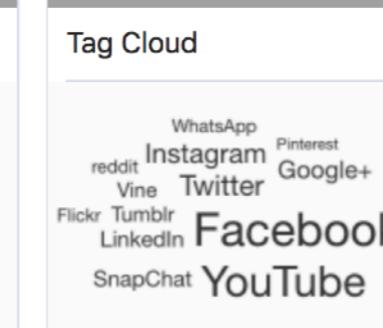
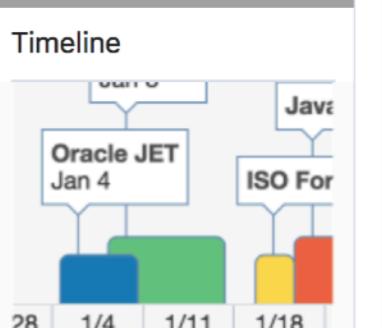
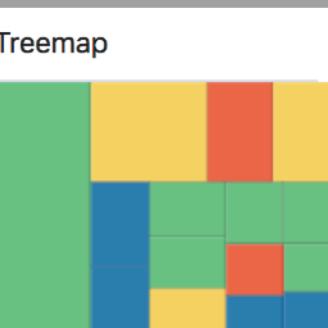


***Knockout.***

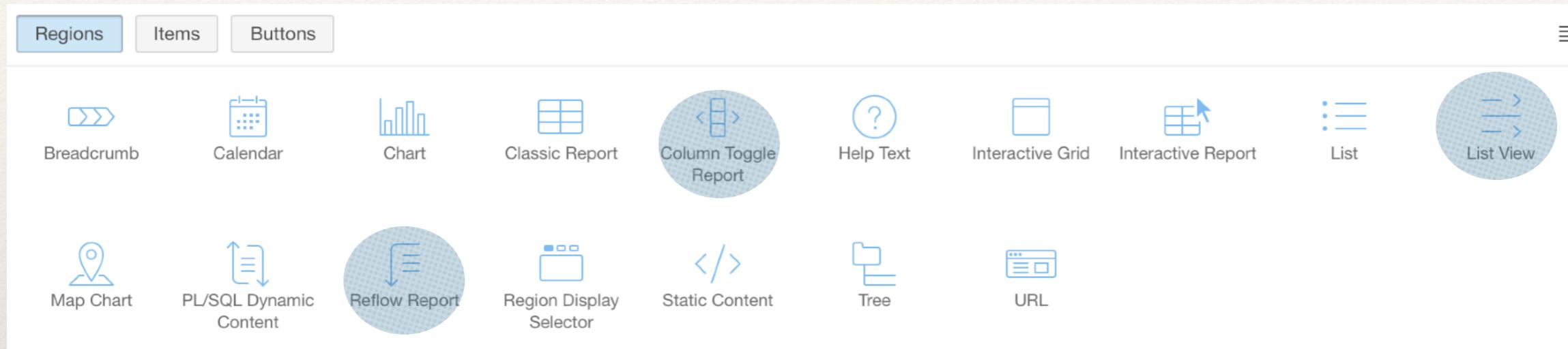


APACHE  
**CORDOVA™**

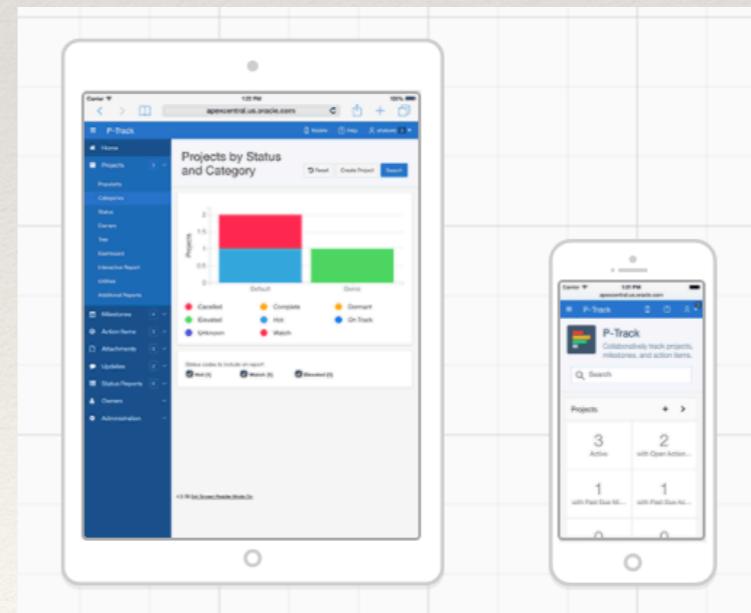
## Visualizations

Use Cases	Chart	Diagram	Gantt	Gauge	Legend	NBox
						
PictoChart	Sunburst	Tag Cloud	Thematic Map	Time Axis	Timeline	Treemap
						

# APEX 18.1 Mobile Devices



We're deprecating jQuery Mobile. The components which were unique to our mobile UI (List View, Column Toggle Report, Reflow Report) are now a part of any app and work with Universal Theme. Touch events like Tap, Double Tap, Press, Pan and Swipe are dynamic action events. Definitely Universal Theme is our strategic direction forward



*Joel R. Kallman, Twitter*



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# SQLcl 18.3 - Command line tool

 SQLcl  
Downloads

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**SQLcl 18.3**

**October 3, 2018 - Update 18.3.0.259.2029**

[Release Notes](#), [Command-Line Reference](#), [Getting Started Video](#), [FAQ](#), [Forum](#)

All Platforms - (7550bdbc481c4603b41096d95fa89e3f)

20 MB [Download](#) 



# SQLcl 18.3 - Command line tool

```
martin@Martins-MacBook-Pro ~/D/Foredrag> sql /nolog
```

```
SQLcl: Release 18.3 Production on Sat Nov 03 16:33:49 2018
```

```
Copyright (c) 1982, 2018, Oracle. All rights reserved.
```

```
@> help
```

```
For help on a topic type help <topic>
```

```
List of Help topics available:
```

```
/  
BREAK  
CONNECT  
EDIT  
INFORMATION  
PRINT  
SAVE  
SSHTUNNEL  
VARIABLE  
@> |
```

```
@  
BRIDGE  
COPY  
EXECUTE  
INPUT  
PROMPT  
SCRIPT  
START  
WHENEVER
```

```
@@  
BTITLE  
CTAS  
EXIT  
LIST  
QUIT  
SET  
STARTUP  
WHICH
```

```
ACCEPT  
CD  
DDL  
FIND  
LOAD  
REMARK  
SETERRORL  
STORE  
XQUERY
```

```
ALIAS  
CHANGE  
DEFINE  
FORMAT  
NET  
REPEAT  
SHOW  
TIMING
```

```
APEX  
CLEAR  
DEL  
GET  
OERR  
RESERVED_WORDS  
SHUTDOWN  
TNSPING
```

```
APPEND  
COLUMN  
DESCRIBE  
HISTORY  
PASSWORD  
REST  
SODA  
TTITLE
```

```
APEX  
-----
```

```
apex - Lists Application Express Applications
```

```
apex export <app id> - Exports the application which could be combined with spool for writing to a file
```

```
@> |
```



# Progressive Web Apps (PWA)

## PROGRESSIVE WEB APPS ARE:



**Progressive:** Work for every user, regardless of browser choice because they're built with progressive enhancement as a core tenet.



**Responsive:** Fit any form factor, desktop, mobile, tablet, or whatever is next.



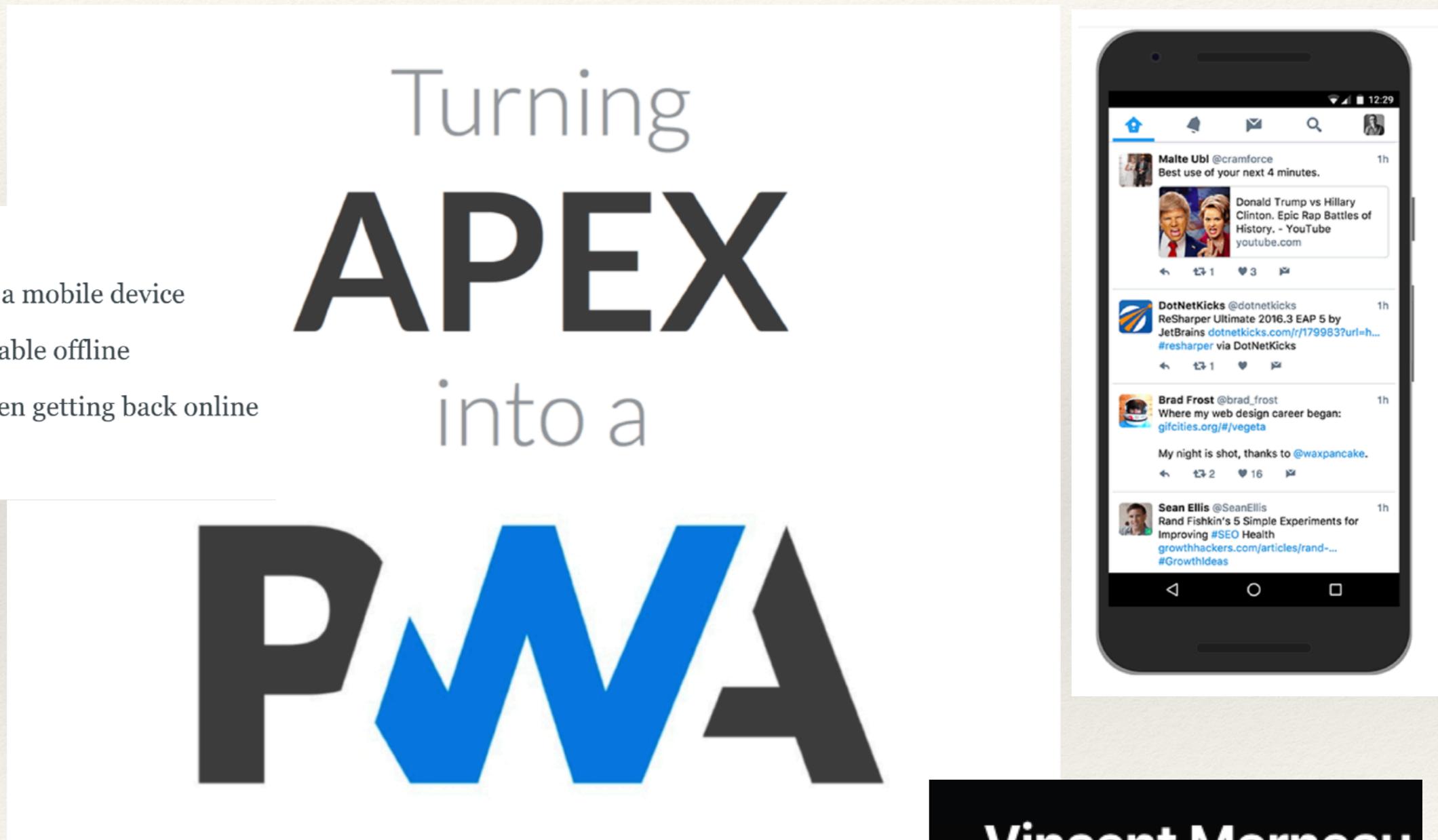
**Connectivity independent:** Enhanced with service workers to work offline or on low quality networks.



# Progressive Web Apps (PWA)

## Covered Features

- Installing the APEX app on a mobile device
- Making the APEX app available offline
- Syncing offline requests when getting back online
- Sending push notifications



# Oracle 18 XE



- 2 CPUs
- 2GB RAM
- 12GB of user data
- 3 Pluggable Databases
- Nearly all features from EE
  - Java
  - Partitioning
  - Compression
  - Redaction
  - VPD
  - Spatial
  - ...

## Where is Oracle APEX?

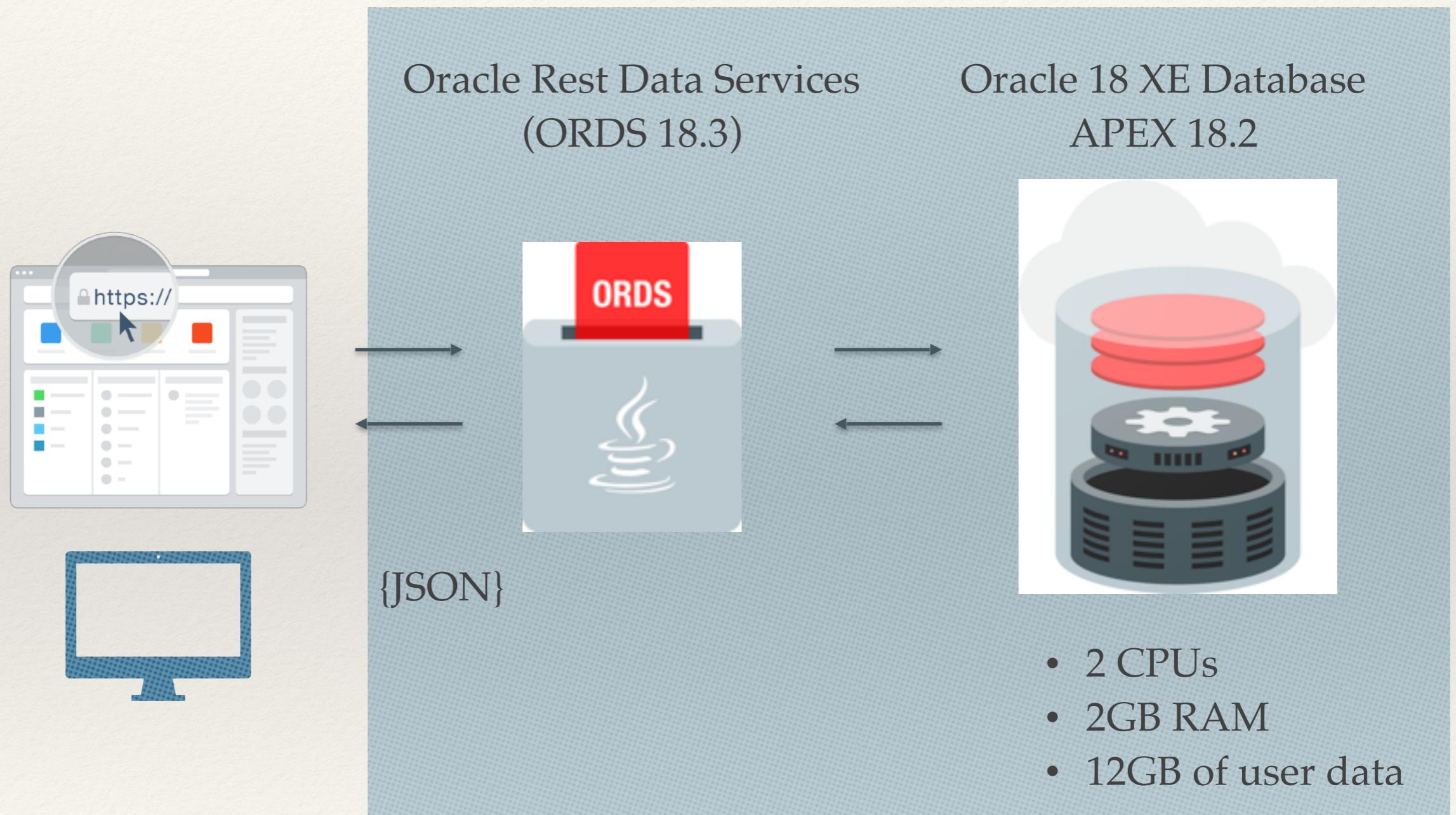
Oracle APEX is no longer included with the distribution. Instead you need to download the latest version from the [Oracle APEX Home Page](#), and follow these instructions [Exporting and Importing Data for Oracle Application Express \(APEX\) Users](#).



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Windows download is not currently available, but is coming soon!

# APEX 18 Starter Stack



# Oracle Cloud

ORACLE Cloud

Contact Chat English Estimate Buy Try for Free

Applications Platform Infrastructure Resources

Cloud Account

Cloud Account with Identity Cloud Service

Cloud Account Name

Next >

**Administrators**

- Perform administrative tasks for individual services
- Monitor key metrics and notifications for services
- Manage users and roles for cloud services
- Access the console for services you administer

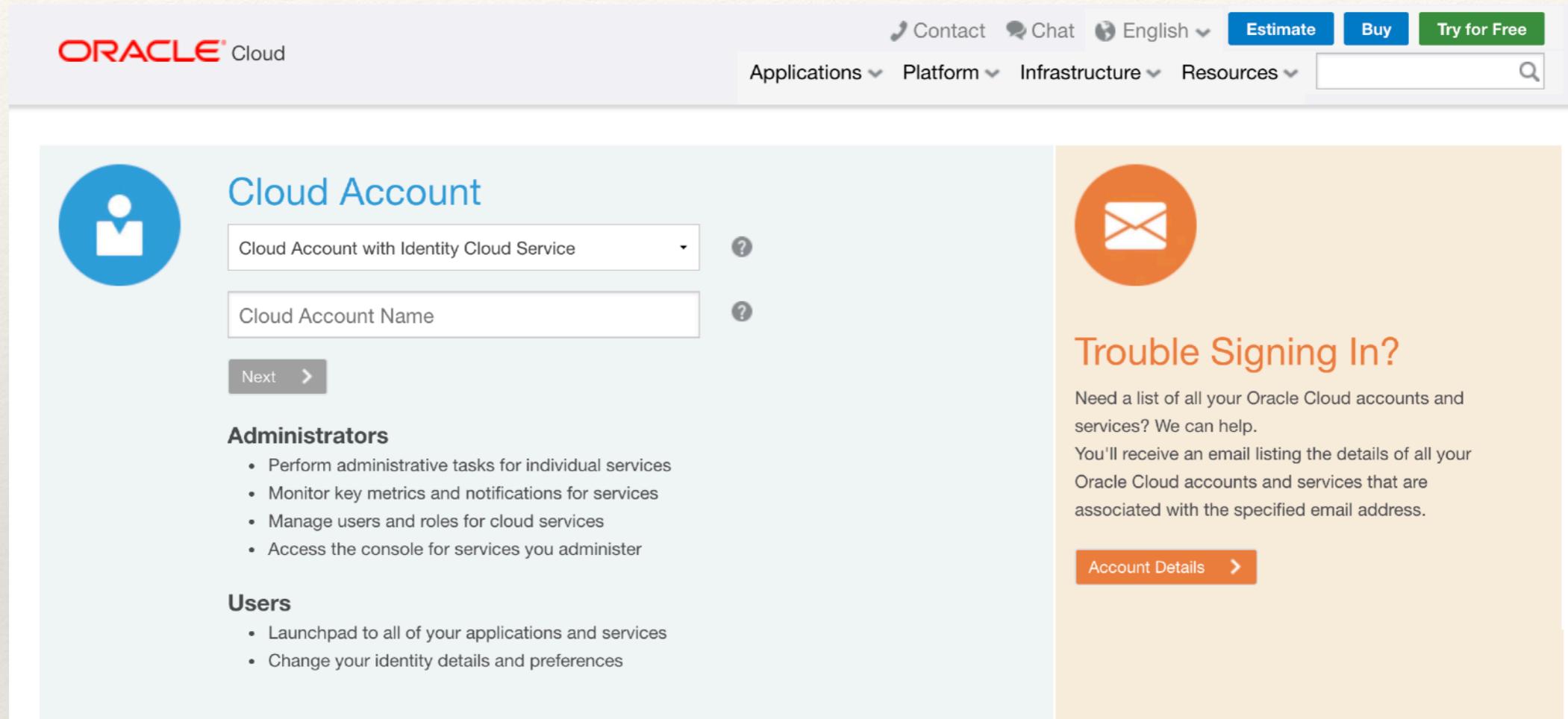
**Users**

- Launchpad to all of your applications and services
- Change your identity details and preferences

Trouble Signing In?

Need a list of all your Oracle Cloud accounts and services? We can help. You'll receive an email listing the details of all your Oracle Cloud accounts and services that are associated with the specified email address.

Account Details >



*How to pick a services, How much will it cost ?,  
Do I get a VM, or just the DB as a service, which  
tools do I get ?, what about SSL and host  
name ?..*



# Oracle Cloud - Choosing and price

Identity Domain mbndatadk - EMEA (traditional) ▾

	x20test
Service Type	Exadata Express
Instance Id	
Status	Active
Plan	Exadata Express Cloud Service
SFTP Account ID	
SFTP URL	sftp2.em2.cloud.oracle.com
Database Shape	X20 (1 OCPU, 20 GB storage)

Identity Domain mbndatadk - EMEA ▾

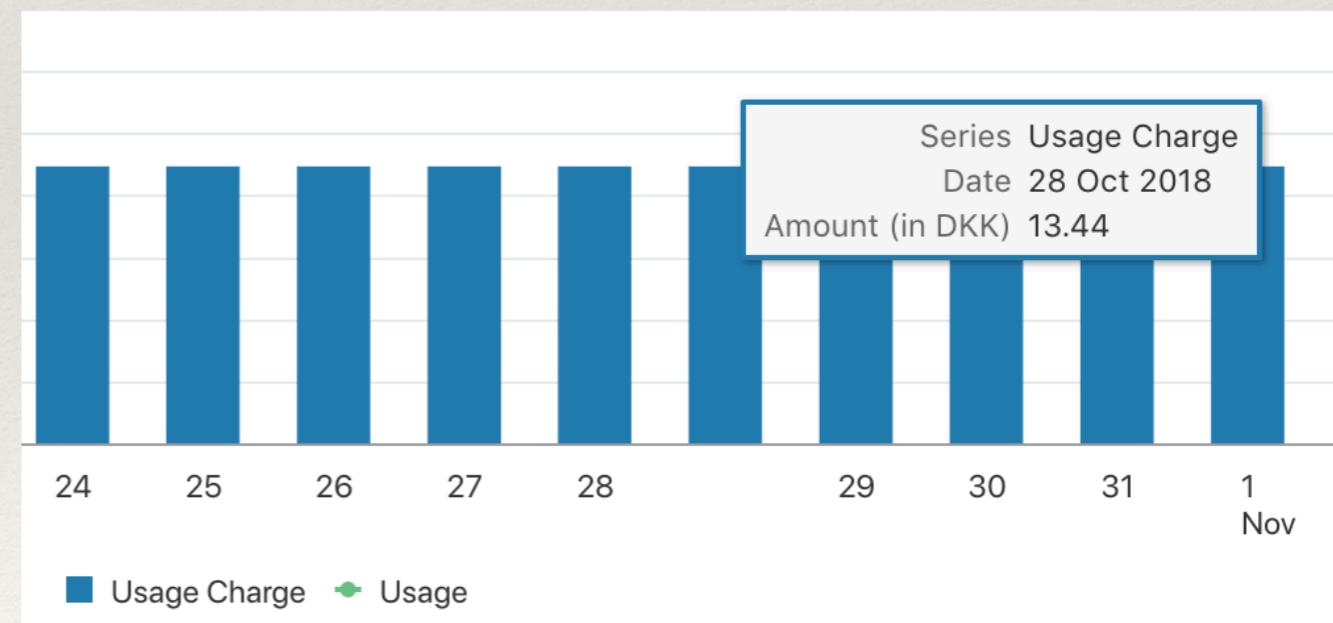
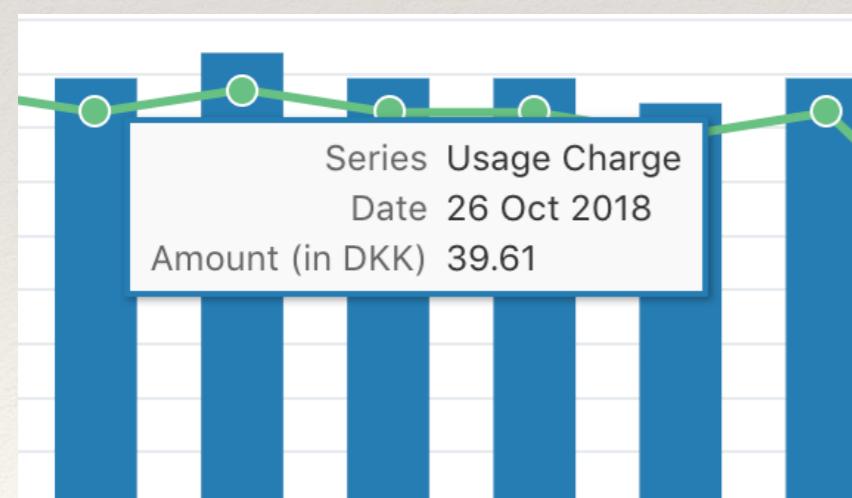
Oracle Database Cloud Service

QuickStarts Welcome! Identity Domain

Instances Activity SSH Access

Summary | As of Nov 3, 2018 4:39:03 PM UTC

	1	1	7.5 GB	170 GB	1
Instances	OCPUs	Memory	Storage	Public IPs	
1		7.5 GB	170 GB	1	
Instances	OCPUs	Memory	Storage	Public IPs	



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# Oracle Cloud - Setting up

```
martin@Martins-MacBook-Pro ~/D/Foredrag> ssh oracle@test01
-- WARNING -- This system is for the use of authorized users only. Individuals
using this computer system without authority or in excess of their authority
are subject to having all their activities on this system monitored and
recorded by system personnel. Anyone using this system expressly consents to
such monitoring and is advised that if such monitoring reveals possible
evidence of criminal activity system personnel may provide the evidence of such
monitoring to law enforcement officials.

Last login: Sat Nov  3 17:45:17 2018
[oracle@test01 ~]$
```

## 1. Install APEX 18.2

Upload apex\_18.2.zip  
Unzip  
Sqlplus / as sysdba  
Alter session set container = PDB1  
Start apexind SYSAUX SYSAUX TEMP <https://static.oracle.com/cdn/apex/18.2.0.00.12/>

## 2. Install SSL certificate in ORDS

ssl.cert=/u01/app/oracle/product/ords/comodocert.crt  
ssl.cert.key=/u01/app/oracle/product/ords/comodokey.key

## 3. Enabling SQL Developer for web

```
./ords -ords_action="enable_schema_for_sdw" \
-ords_sdw_schema="PDBADMIN" \
-ords_sdw_schema_password="/home/oracle/password.txt" \
-ords_sdw_schema_container="PDB1" \
-ords_sdw_schema_enable_dba="TRUE"
```

## 4. Setup DNS

DNS

Manage your Domain Name System (DNS) settings

DNS Records

A, AAAA, and CNAME records can have their traffic routed through the Cloudflare system. Add more records using this form, and click the cloud next to each record to toggle Cloudflare on or off.

Type	Name	Value	TTL	Status
A	cloud	points to 144.21.68.73	Automatic	



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# Oracle Cloud - What did I get ?

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DEMO



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# Thank You

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## Questions ?

