

# How to install Apex5 in windows and configure Oracle REST Data Services as web listener

## Installing Apex5

Before installing apex 5 you should determine which Web listener you would like to use. Available options include the followings -

- Oracle REST Data Services
- Embedded PL/SQL Gateway
- Oracle HTTP Server and mod\_plsql

In all of these options Apex installation procedure is same and configuring Embedded PL/SQL Gateway is simpler. Embedded PL/SQL gateway provides the equivalent core features of Oracle HTTP Server and MOD\_PLSQL. In this article I'll install apex 5 and configure the Oracle REST Data Services with tomcat server. In this case I've used

- Oracle Database 11gR2 (11.2.0) 64-bit
- Oracle apex 5.0
- Toad 12.8 64-bit
- Windows 7 64-bit

**N.B.** I've discussed on Apex 4.2 installation with Embedded PL/SQL Gateway configuration [here](#)

Remember I'll not discuss about installing database. I assume that you have a database already installed and you have the administrative privileges on the database. Also assume that you have downloaded apex. If not so, you may get a copy of [Oracle Apex 5.0 on OTN](#)

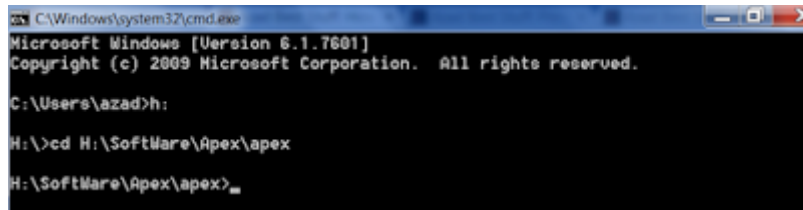
## Steps to install Oracle Apex 5

**Step 1:** Login to database and create a table space (e.g.TS\_APEX). Table space creating command is as below

```
CREATE TABLESPACE ts_apex
DATAFILE 'C:\APP\ADMINISTRATOR\ORADATA\CANOPAS\TS_APEX01.DBF'
SIZE 2048M AUTOEXTEND ON NEXT 100M
MAXSIZE UNLIMITED
LOGGING
ONLINE
PERMANENT
EXTENT MANAGEMENT LOCAL AUTOALLOCATE
BLOCKSIZE 8K
FLASHBACK ON;
```

**Step 2:** Unzip the apex folder. (Right click on apex\_5.0.zip folder then choose extract here) you will find a folder named apex. Copy this folder anywhere on your hard drive you wish. In my case I've put it in H:\SoftWare\Apex\apex.

**Step 3:** Open Command Prompt (cmd). Change your working directory to apex where you put the unzipped apex folder (in my case it is H:\SoftWare\Apex\apex). Below images showing the command



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\azad>h:

H:\>cd H:\SoftWare\Apex\apex

H:\SoftWare\Apex\apex>
```

**Step 4:** Now open SQL\*Plus with nolog option by executing the command  
**H:\SoftWare\Apex\apex> sqlplus /nolog**

Then

**SQL> conn sys as sysdba** (To connect to database with sysdba privileges) When password require enter sys user's password.

**Step 5:** Now you need to run apex installation file named apexins.sql. in command prompt enter the command like below **SQL> @apexins.sql ts\_apex ts\_apex temp /i/**

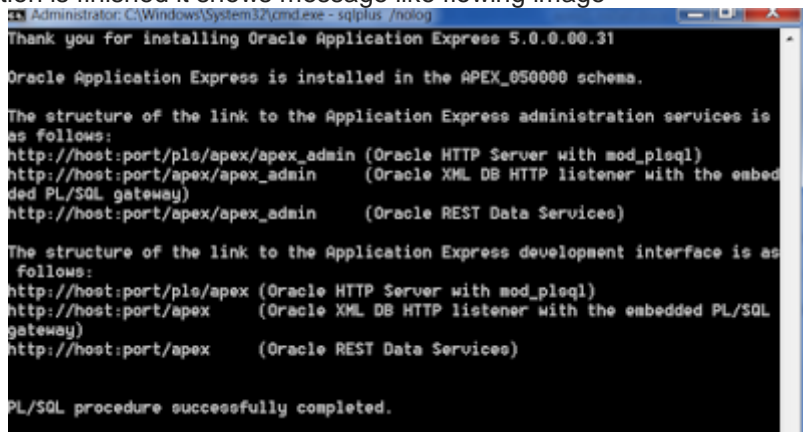
[Here **APEXINS.SQL** is the apex main installation file. **TS\_APEX** is the table space name which we creates at first step for apex user, **temp** is also a table space for apex temporary file. **/i/** is a virtual drive for images. ]

It may take 20/30 minutes and may be disconnect from database. Remember whenever you disconnect from database every time you must follow the step (3, 4) to connect again.

When Oracle Application Express installed, it creates three new database accounts:

- **APEX\_050000** - The account that owns the Oracle Application Express schema and metadata
- **FLows\_FILES** - The account that owns the Oracle Application Express uploaded files
- **APEX\_PUBLIC\_USER** - The minimally privileged account used for Oracle

When installation is finished it shows message like flowing image



```
Administrator: C:\Windows\System32\cmd.exe - sqlplus /nolog
Thank you for installing Oracle Application Express 5.0.0.00.31

Oracle Application Express is installed in the APEX_050000 schema.

The structure of the link to the Application Express administration services is
as follows:
http://host:port/pls/apex/apex_admin (Oracle HTTP Server with mod_plsql)
http://host:port/apex/apex_admin (Oracle XML DB HTTP listener with the embed
ded PL/SQL gateway)
http://host:port/apex/apex_admin (Oracle REST Data Services)

The structure of the link to the Application Express development interface is as
follows:
http://host:port/pls/apex (Oracle HTTP Server with mod_plsql)
http://host:port/apex (Oracle XML DB HTTP listener with the embedded PL/SQL
gateway)
http://host:port/apex (Oracle REST Data Services)

PL/SQL procedure successfully completed.
```

In a new installation of Oracle Application Express, you must change the password of the internal ADMIN account. To changes password connect to database again and run the flowing command

**SQL> @apxchpwd**

When prompted enter a password for the ADMIN account. It should be complex password like abcd#1234 Also you need to unlock APEX\_PUBLIC\_USER. To unlock account execute the following command

**ALTER USER APEX\_PUBLIC\_USER ACCOUNT UNLOCK;**

**ALTER USER APEX\_PUBLIC\_USER IDENTIFIED BY new\_password;**

## Configuring Restful Services

To configure oracle restful service connect to the database as sysdba and enter the following command

**SQL> @apex\_rest\_config.sql**

Enter a password for the APEX\_LISTENER user []

Enter a password for the APEX\_REST\_PUBLIC\_USER user []

## Installing and Configuring Oracle Rest Data Services

a. Download the file " ords.version.number.zip" from the [Oracle REST Data Services download page](#)

b. Unzip the downloaded zip file into a directory (folder) of your choice. I put it in E:\ords.3.0.3.351.13.24. Actually there is nothing to install, that means your installation is done. Now you need to configure the Rest Data Service.

**N.B.**

I. By default, the context roots for accessing Oracle Application Express through Oracle REST Data Services is.../ords. If you wish to have a context root of ... /apex for accessing Oracle Application Express, rename the file ords.war (E:\ords.3.0.3.351.13.24\ords.war) to apex.war before installing Oracle Rest Data Service. If you change the ords.war to apex.war then change the file ords\_params.properties. Open the ords\_params.properties file (location E:\ords.3.0.3.351.13.24\params) enter the line as it is here: **rest.services.apex.add=true**

II. Create a folder named config in the rest data service folder (E:\ords.3.0.3.351.13.24\config) to store rest data service configuration data. Later this location will be needed during configuration. Remember you can provide any location in your hard drive. To keep it in one place I've create this folder in ords.3.0.3.351.13.24 folder

c. following are the Installation/configuration options-

- Simple Installation/configuration Using a Parameter File
- Advanced Installation/configuration Using Command-Line Prompts
- Manual Installation/configuration (If You Do Not Have SYSDBA Privileges)

We will Choose '**Advanced Installation/configuration Using Command-Line Prompts**' from these options

Now open cmd and change your working directory to the directory or folder containing the ords.war file (in my case it is E:\ords.3.0.3.351.13.24).If you don't have rename ords.war to apex.war then enter the following command

**E:\ords.3.0.3.351.13.24> java -jar ords.war install advanced**

if you have rename ords.war to apex.war then enter the following command

**E:\ords.3.0.3.351.13.24> java -jar apex.war install advanced**

It will prompt you for some configuration information. Here I've showed the full prompt and what I selected.

Microsoft Windows [Version 6.1.7601]

Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32>cd E:\ords.3.0.3.351.13.24

C:\Windows\system32>e:

**E:\ords.3.0.3.351.13.24>java -jar apex.war install advanced**

Microsoft Windows [Version 10.0.10586]

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```
C:\Users\azad>cd D:\Oracle\RestDataService\ords.3.0.3.351.13.24
```

```
C:\Users\azad>d:
```

```
D:\Oracle\RestDataService\ords.3.0.3.351.13.24>java -jar apex.war
install advanced
This Oracle REST Data Services instance has not yet been configured.
Please complete the following prompts
```

```
Enter the location to store configuration
data:D:\Oracle\RestDataService\ords.3.0.3.351.13.24\config
Enter the name of the database server [localhost]:bh
Enter the database listen port [1521]:
Enter 1 to specify the database service name, or 2 to specify the
database SID [1]:2
Enter the database SID [xe]:erp
Enter 1 if you want to verify/install Oracle REST Data Services schema
or 2 to skip this step [1]:
Enter the database password for ORDS_PUBLIC_USER:
Confirm password:
```

```
Please login with SYSDBA privileges to verify Oracle REST Data
Services schema. Installation may be
required.
```

```
Enter the username with SYSDBA privileges to verify the installation
[SYS]:
Enter the database password for SYS:
Confirm password:
Enter 1 if you want to use PL/SQL Gateway or 2 to skip this step.
If using Oracle Application Express or migrating from mod_plsql then
you must enter 1 [1]:
Enter the PL/SQL Gateway database user name [APEX_PUBLIC_USER]:
Enter the database password for APEX_PUBLIC_USER:
Confirm password:
Enter 1 to specify passwords for Application Express RESTful Services
database users
(APEX_LISTENER, APEX_REST_PUBLIC_USER)
or 2 to skip this step [1]:
Enter the database password for APEX_LISTENER:
Confirm password:
Enter the database password for APEX_REST_PUBLIC_USER:
Confirm password:
Feb 07, 2016 5:48:05 PM
oracle.dbtools.common.config.file.ConfigurationFilesBase update
INFO: Updated configurations: defaults, apex, apex_pu, apex_al,
apex_rt
... Log file written to
D:\Oracle\RestDataService\ords.3.0.3.351.13.24\logs\ordsupgrade_2016-
02-07_174805_00931.log
Feb 07, 2016 5:48:06 PM oracle.dbtools.installer.Installer upgradeORDS
INFO: Upgrading Oracle REST Data Services schema to version 3.0.1.135
... Log file written to
D:\Oracle\RestDataService\ords.3.0.3.351.13.24\logs\ordsupgrade_2016-
02-07_174806_00217.log
Feb 07, 2016 5:48:07 PM oracle.dbtools.installer.Installer upgradeORDS
INFO: Upgrading Oracle REST Data Services schema to version 3.0.2.223
... Log file written to
D:\Oracle\RestDataService\ords.3.0.3.351.13.24\logs\ordsupgrade_2016-
02-07_174807_00957.log
```

```
Feb 07, 2016 5:48:11 PM oracle.dbtools.installer.Installer upgradeORDS
INFO: Upgrading Oracle REST Data Services schema to version 3.0.3.329
... Log file written to
D:\Oracle\RestDataService\ords.3.0.3.351.13.24\logs\ordsupgrade_2016-
02-07_174811_00679.log
Feb 07, 2016 5:48:12 PM oracle.dbtools.installer.Installer upgradeORDS
INFO: Upgrading Oracle REST Data Services schema to version 3.0.3.344
... Log file written to
D:\Oracle\RestDataService\ords.3.0.3.351.13.24\logs\ordsupgrade_2016-
02-07_174812_00284.log
Feb 07, 2016 5:48:12 PM oracle.dbtools.installer.Installer upgradeORDS
INFO: Upgrading Oracle REST Data Services schema to version 3.0.3.349
... Log file written to
D:\Oracle\RestDataService\ords.3.0.3.351.13.24\logs\ordsupgrade_2016-
02-07_174812_00362.log
... Log file written to
D:\Oracle\RestDataService\ords.3.0.3.351.13.24\logs\ordsupgrade_2016-
02-07_174812_00422.log
Feb 07, 2016 5:48:13 PM oracle.dbtools.installer.Installer upgradeORDS
INFO: Completed upgrade for Oracle REST Data Services version
3.0.3.351.13.24.
Elapsed time: 00:00:08.175
```

Enter 1 if you wish to start in standalone mode or 2 to exit [1]:2

D:\Oracle\RestDataService\ords.3.0.3.351.13.24>

## Installing Apache Tomcat Application Server

To download tomcat go to [tomcat site](#). From left side click on your desired version number. On the next page click on **32-bit/64-bit windows service installer** it will download the tomcat .exe for windows. Now install tomcat by running downloaded (.exe) file

### 1. Deploying to Apache Tomcat

To configure Oracle Application Express Images on Apache Tomcat: Create a folder into /webapps (in my case it is E:\Tomcat 9.0\webapps) named **i**. Copy the contents from the /images folder (in my case it is H:\SoftWare\Apex\apex\images) to /webapps/i/.

### Installing the Apache Tomcat Deployment

Move the ords.war or apex.war file from rest data service into tomcat's webapps folder (/webapps) folder where Apache Tomcat is installed Access Oracle Application Express by typing the following URL in your web browser: <http://hostname:port/ords/> or <http://hostname:port/apex/>