# Oracle Application Express
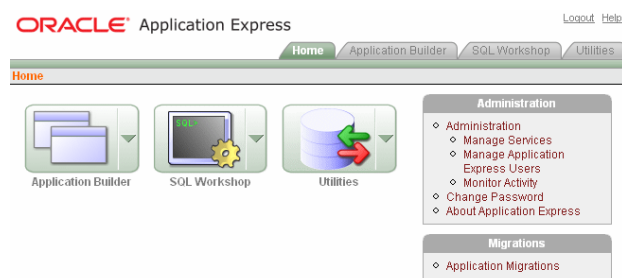
*by Lewis Cunningham*

## 1. What is Oracle Application Express?

Oracle Application Express (also called APEX and formerly called HTML DB) is a FREE RAD web development tool. APEX is written using PL/SQL and runs completely inside of a web browser. APEX is an IDE and a runtime environment. You use APEX to write web applications. Users, using their database user ID, log into APEX and run their application from a menu.

With the APEX IDE, you can create forms, reports and charts. All of the normal web widgets are available: radio groups, buttons, drop down lists, date pickers, etc. You can even integrate your own JavaScript code should you need it.

Output from APEX applications can be to the screen or to PDF, Excel spreadsheet, Flash, or even integrated into a web service. You can use a supplied theme for a consistent look and feel or create your own theme for a personalized feel to your application.



The most important thing to remember about Oracle Application Express is that it is designed from the ground up to be tightly integrated with the Oracle Database, to be a fully capable web development environment, and to be easy enough for savvy business users to create or extend applications for themselves.

## 2. How does APEX integrate with the database?

Oracle Application Express is truly a database application. The IDE, the menus, and all of the screens you see in APEX are written in PL/SQL. The meta data for all of those screens, reports, and menus are stored in relational tables within the database. When you point your browser at the APEX URL, the Oracle HTTP listener (Apache + mod_plsql or the PL/SQL gateway, depending on database version) receives that call and uses PL/SQL and the meta data stored in database tables to paint the welcome screen.
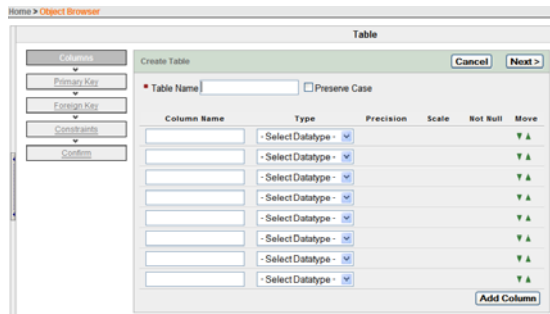


When you log into APEX you are using an actual database user ID. This user ID is associated with a role (or roles) within the database and these roles determine what access you will have. If you are an administrator, you have access to create users and workspaces. As a developer, you have access to create new applications. If you are configured as an end-user, you will be able to run one or more applications.

Oracle Application Express is integrated with the Oracle Database as no environment is. If you need to extend the basic functionality of APEX, there is no need to learn additional languages or link in additional libraries. On the rare occasions you need to extend functionality, you'll either use SQL for data access or PL/SQL when procedural code is required.
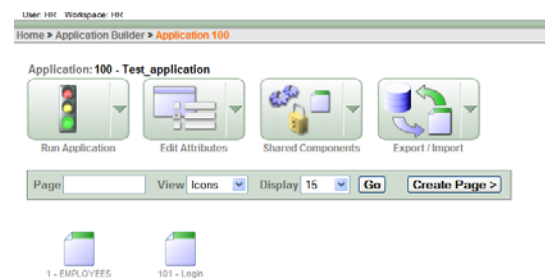
## 3. How is APEX a RAD Tool?

Because APEX is so tightly integrated to the database, you can prototype screens while sitting with the user. The Object Browser allows you to create database objects such as tables in addition

to viewing those same objects. This allows you to create objects on the fly and then build tables around those objects.



The IDE, including the above Table builder, and all applications are run within a browser. Turn-around time is immediate. Because APEX is declarative, you can easily make changes in real-time via the built-in wizards.



Because APEX controls session information for you, and because you use the security framework built into the Oracle Database, you can concentrate on delivering applications, not on connection configuration and other typical web development time wasters.

## 4. How much does APEX Cost and where can I get it?

APEX comes pre-installed and completely integrated with Oracle Database Express Edition (XE). For all other editions of Oracle Database, Oracle Application Express comes as a free add-on that can be downloaded and installed.

If you chose to "try before you buy", or since it's free, "try before you install", you can also use the hosted APEX Online facility. This facility allows you

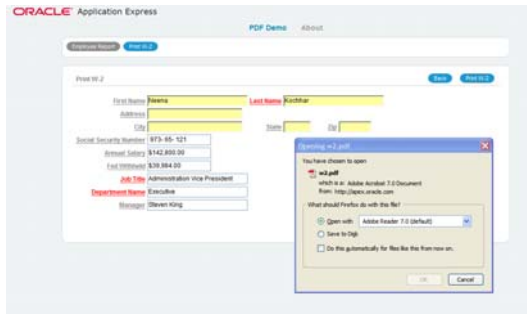to create and run complete applications just as you would on your own equipment.



## 5. What is the current version of APEX and why should I upgrade?

The current version of Oracle Application Express is 3.0. This new version offers many enhancements. Among the most useful are:

- **Print to PDF** – Users can chose to export their reports and screens to PDF output.

- **Migrate from MS-Access** – Using an export tool and the Access Migration Workbench, you can migrate user applications to APEX.

- **Calendar Widget** – Older versions included a calendar widget but now users can choose between day, week, or month calendars.

- **Improved Page and Region Caches** – Caching improves performance.

- **Application Builder Defaults** – The developer can set defaults for wizards to reduce development time (basically themes for development).

The benefits of upgrading include performance enhancements and additional usability features for both the developer and the end user.
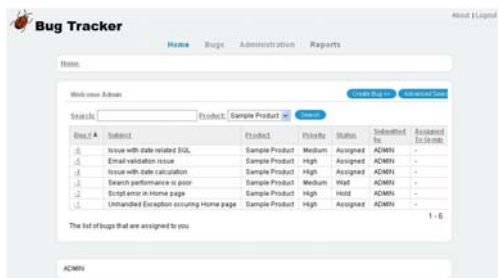
Oracle Database 10g Express Edition only supports Oracle APEX version 2.2.

# 6. What applications come with APEX?

The current version of APEX allows you to download pre-packaged applications for you to learn from and/or modify for your own uses. You can currently download (form Oracle's Technology site):

- **Employee Directory Lookup** – This is exactly what it sounds like.

- **Ask The Expert** – Q&A Site ala "asktom".

- **Bug Tracker** – Log and track bug reports.



- **Discussion Forum** – Threaded chat, user management, and more.

- **Document Library** – Multi-user document repository (Word, Excel, etc).

- **Project Issue Tracker** – Define, assign, and report project issues.

- **Online Store** – Catalog and shopping cart.

- **Software Projects** – Project task tracker.

You are by no means limited to this list of projects. An Internet search for *"oracle APEX projects"* gets almost 500,000 hits and more are being posted all the time.
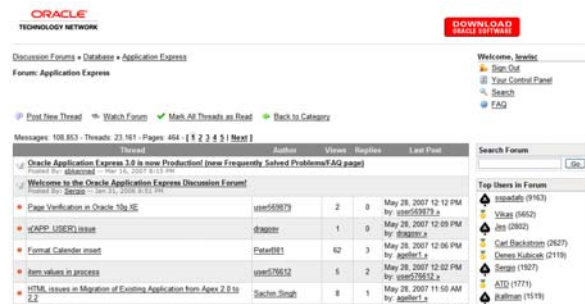
# 7. Where can I try APEX?

As mentioned above, you can sign up for a free account at apex.oracle.com (Oracle's hosted Application Express site). When you sign up for an account, you identify the work area name that you want to use and identify an administrator. From there you can create applications and users just as you would on your own hardware and systems. apex.oracle.com is not intended for production systems, it is intended for exploration and testing.

For additional hosting companies, check out the Oracle Application Express Community. These sites offer varying levels of hosting including free developer access and full application deployment.

# 8. What kind of support exists for APEX?

Application Express has a robust community to help you develop, deliver, and use APEX applications. The first stop for support would be the APEX Forums at Oracle Technology Network. This active forum provides tips and answers from many experts both inside and outside of Oracle.



Other sites include:

- The APEX Wiki – Wikipedia for the APEX crowd.

- APEX Studio – Community created applications available for download.

- APEX Mailing List – Sign up for info and Q&A.

- The Oracle APEX Community Listing

The list is growing daily.

## 9. Where can I get more information?

In addition to the OTN forums and community sites, Application Express has a huge following in the blogosphere. Many expert level resources maintain blogs about APEX. Some particularly well known blogs are:

- Scott Spendolini – APEX Guru and owner of Sumner Technologies (an APEX Training, Services, and Consulting company).

- Patrick Wolf – Inside Oracle APEX, Patrick is a long-time Oracle veteran.

  Dimitri Gellis – Another long-time Oracle vet and co-founder of APEX Evangelists, an APEX specific company, with John Scott.

- John Scott – As mentioned above, co-founder of APEX Evangelists, an Oracle ACE, and Application Express Developer of the Year for 2006.

You can find all of these and more at the OTN community site.

## 10. What is the future of Application Express?

Oracle has made a large commitment to Application Express. In a fairly short time, APEX has made it to version 3.0. Every release makes it easier to use and deploy applications. While recent releases have improved APEX integration with SOA, APEX does not try to compete with jDeveloper or the Oracle Java stack. APEX is the glue that can combine various parts of an enterprise solution into a whole.

APEX is the tool of choice to create web-based, database-centric applications. If your business logic

is in the database tier, APEX is the way to go. If your logic is in the middle tier or is implemented at the java level, J2EE may be the better choice. APEX take-up has doubled in the past year and thousands of developers are using APEX. Numbers like these ensure a healthy future for APEX. A recent InfoWorld article contains the following:

> *"We're going to take out the need to understand the database," said Mike Hichwa, vice president of software development at Oracle, talking about Application Express 3.1, which is likely to appear before year-end. The next release of the tool will retain its core functionality but will also be more wizard-driven so it's easier for nonprogrammers to use, he added.*

> *Application Express enables Oracle database users, including those with limited technical skills, to create and manage secure Web applications using only a Web browser. The tool can be used to prototype Web-based applications as well as run those applications supporting tens to thousands of users.*

> *Currently, Oracle estimates that around 100,000 developers are using Application Express on a monthly basis, but the company would like to open up the tool to many more users, Hichwa said. Oracle's particularly interested in those people who are currently using Microsoft Corp.'s Access database or its Excel spreadsheet or IBM Corp.'s Lotus Notes groupware to develop Web-based applications.*

I expect APEX to have a very bright future indeed!

## About the Author

Lewis Cunningham has been writing the blog An Expert's Guide to Oracle Technology since March 2005. Lewis is an Oracle ACE, certified PL/SQL developer, published author, and a frequent conference presenter. For more on Oracle APEX, download Lewis' blogcast The Buzz About Oracle Application Express, or visit the Oracle Application Express website at Oracle Technology Network.