CHAPTER 1

OHS, EPG, and APEX Listener Compared

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When I first started using APEX, I didn’t really have a choice when it came to deciding which web server to use; in a similar vein to the often-quoted Henry Ford (“any colour as long as it’s black”), it was a case of “Use any web server as long as it’s the OHS”. The OHS is the commonly used name for the Oracle HTTP Server.

However, as with all things technology related, times change. Oracle 9i Release 2 brought XML DB and with it an embedded web server. As of Oracle 10g Release 2, this embedded web server can be used as an embedded PL/SQL gateway to run PL/SQL via a browser. It is commonly known as the EPG (Embedded PL/SQL Gateway) and controlled via the DBMS_EPG package.

So, things were good: we now had a choice of the OHS and the EPG, both of which were officially supported by Oracle. But, never being content to sit on their laurels, the Oracle team decided to give us a third option, the APEX Listener, which is a J2EE alternative to the OHS. The APEX Listener was created to explicitly fulfill the needs of the web server that has to sit between the web browser and your Oracle APEX application, but it can also support many other configurations, since it can be deployed using Oracle Web Logic Server (WLS), Oracle Glassfish Server, and OC4J.

Why Should I Care About This Chapter?

When I first came up with the idea for this book (and before I’d approached the other authors), I thought a lot about what sort of chapter I’d write. There are so many areas of APEX that interest me, particularly with the release of APEX 4.0, it seemed like an impossible choice. I learned with my first book, Pro Oracle Application Express, that no matter what you write about, some people will love a chapter while others won’t find it that relevant to them.

So, I thought to myself, what is the one thing that everyone who uses APEX has to use, yet probably never gives a second thought to? The answer (of course!) is the web server aspect.

You might be thinking “Okay, but I’m going to skip this chapter, because that’s something my System Admin takes care of.” Well, dear reader, please bear with me. As an APEX developer myself, I know that there are things you can do with your web-server configuration that will really impact the performance and scalability of your APEX applications (you should care about that!), and there are also some really great features available in the web server than you can leverage in your applications (and you should care about that!).

So, while at first glance this chapter might not seem as cool, sexy, or “APEX 4.0” as some of the other chapters in this book, I hope that you will find some things that make you think or, even better, make you use them!
Now, it’s impossible for me to say “Always use XYZ, it is the best.” The truth is more likely that the right choice probably depends on your exact requirements. In fact, this would be a very short discussion indeed if I could just say that XYZ was always best in all circumstances. So, in this chapter, I will go through some of the areas that I think are important for the web server. They will include the following:

- **Installation**: How quick and easy is it to get up and running? In some situations you might not care about making it the most secure environment possible and just want it up and running as fast as possible.
- **Configuration**: After the initial setup, how configurable is it? What sort of options can I “tweak”?
- **Extensibility**: Does the web server offer any ways to extend it and add functionality?
- **Scalability and Performance**: How well does the web server scale? If the number of end users of my application grows will I need to add more web server or can it scale up?

These are overarching concepts and I won’t rigidly stick to them, but they give you a general idea of the sort of things I believe are important. Rather than jumping back and forth between the different options (which could be confusing), I’m breaking the rest of the chapter into three parts to cover each of the options and show the various possibilities and features provided by each of them.

### Web Server Basics

If you have never looked at the Oracle APEX architecture before, it really is a pretty simple and yet powerful architecture. In the case of the OHS, the web server sits between the web browser and the database and is responsible for handling the requests from the web browser, passing them through to the database (via something called `mod_plsql`), then APEX processes the request and generates the response (the HTML code to send back) which is passed by to the browser via the `mod_plsql` module in the OHS. Figure 1-1 illustrates this architecture.

![Figure 1-1. The Oracle HTTP Server architecture](image)

By contrast, when you use the EPG there is no “web server in the middle”; the web browser is actually connecting directly to the database, as shown in Figure 1-2.