

Moving to the APEX Listener

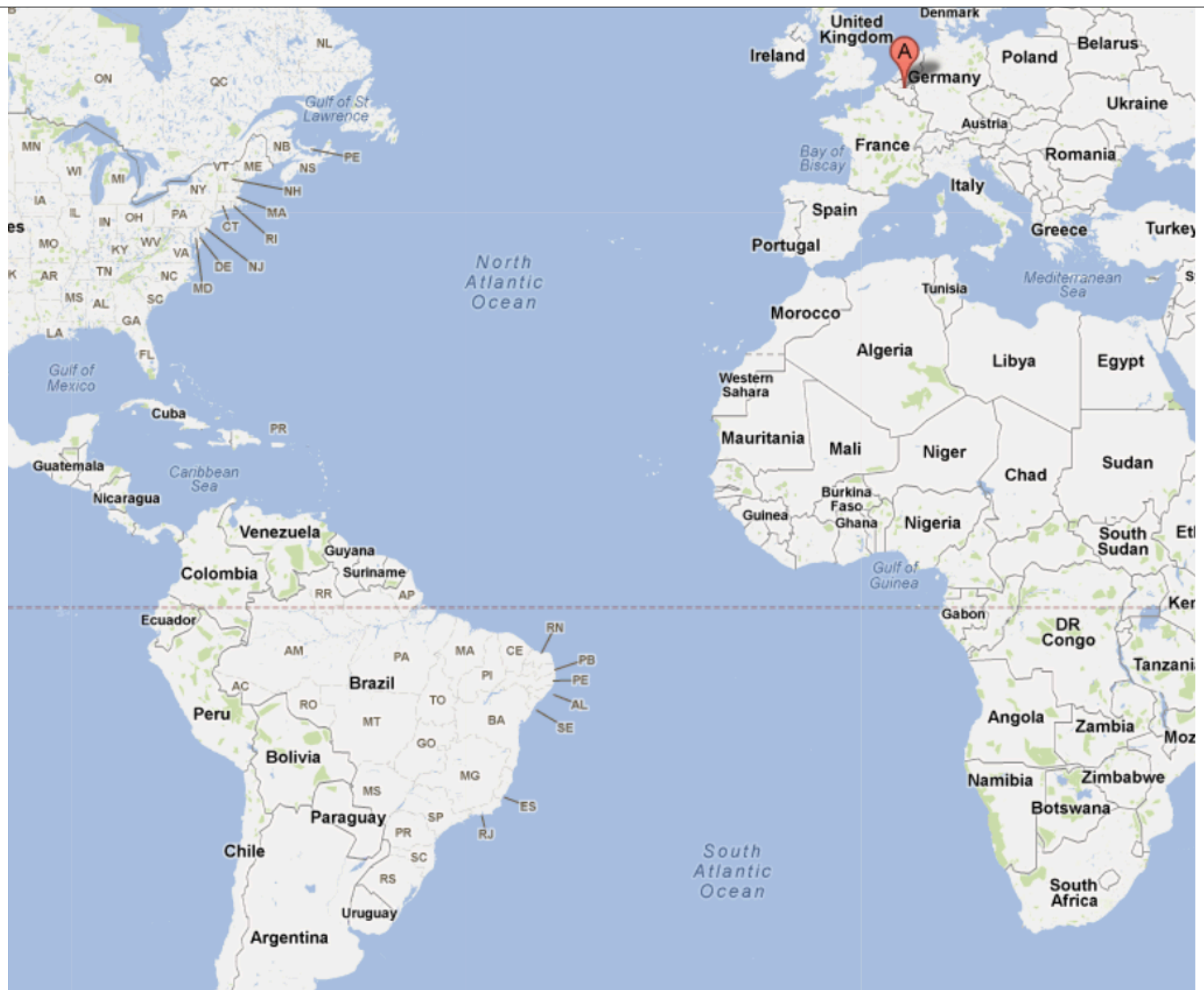
Dimitri Gielis



About me



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Dimitri Gielis Blog (Oracle Application Express - APEX)

I created this Blog to share my knowledge especially in Oracle Application Express (APEX) and my feelings ...

SUNDAY, JUNE 24, 2012

My view on APEX 4.2 EA (ready to test)

Things have been busy lately... now being at the ODTUG KScope 2012 conference I'll take the opportunity to do some more tweets and blog posts.

The last week the Oracle APEX Development team made a public APEX 4.2 EA available. You find it on

<https://apexea.oracle.com/i/index.html>

You may also want to read [this post](#) to find more details about availability etc.

So what is new in APEX 4.2?

You find a description of all the new features [here](#).

The top 3 biggest things for me are around:

- ▣ Mobile development
- ▣ HTML5 (themes, items, charts)
- ▣ Packaged applications

I'll go into more detail in some other blog posts later, but here are already some teasers.

1) [An APEX app](#) build by [Marc Sewtz](#), it shows what you can build with the new Mobile Wizards in APEX 4.2.



My next public appearances:

- ▣ [OBUG Health SIG: 19th June 2012](#)
- ▣ [ODTUG KScope: 24/28-JUN-2012](#)
- ▣ [Oracle Open World: 30/4-OCT-2012](#)



About Me



 [Dimitri Gielis](#)

The views expressed are my own. The views and opinions expressed by visitors to this blog are theirs and do not necessarily reflect mine.

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Tools



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Tweets



Dimitri Gielis (APEXBlogs) Twitter is currently blocking APEXBlogs... we'll have to wait till they allow syncing from our server again. 03-AUG



OliverLemm (Oliver) Use always for every lov in #orclapex a single table/relation not a general lov table.The dbmodel is much safer and better. 28-JUL



RoelH (Roel Hartman) Help! Hitting the "ORA-31167: XML nodes over 64K in size cannot be inserted" when calling web service in #orclapex. Upgrade is not an option 28-JUL



apex_freelancer (Matt Nolan) Preview: DA plugin combination, added

[View more >](#)

Plugins

RDS Customizable	14-DEC
ClariFit From To Date Picker	01-DEC
Bookmark	30-NOV
ClariFit Dialog	29-NOV
JasperServer Report Tunnel	04-NOV
Month Picker	03-NOV
Shuttle Extender	11-OCT
Super LOV for Tabular Form	02-OCT
Set Multiple Items	30-SEP

[View more >](#)

Blogs

Load more rows to report while scroll

Posted on 17-DEC-2011 12:13 by Jari.Laine

How create report that can be scrolled vertically and while scroll fetch more rows from database.

[Oracle Learning Library Advertisement Video](#)

In the Picture



[Request to list me too](#)

Links

Manhattan, UI and security

MANAGER YEAR

management tool

if pills came in multiple
them more easily. But
ing to manage differ-
ross an enterprise, "We
the stack," says Naveen
structure at Colson and
fect of the Year.
upply, and techni-
euthical industry. The
ge its Oracle ecosystem,
ugh a centralized man-
le Enterprise Manager's
the IT environment.
enterprise Manager as
f enterprise manage-
st year with Oracle

of these devices... and integrate new
lights and televisions when they're not in use."



DIMITRI GIELIS ORACLE APPLICATION EXPRESS DEVELOPER OF THE YEAR

As a developer, the passion for Oracle Application Express doesn't fade.

Most developers love Java or .NET. But Dimitri Gielis' true love is Oracle Application Express.

Oracle Application Express is like a girl that you're in love with—the passion never goes away," says Gielis, director of Apex Evangelists and Oracle Magazine's Oracle Application Express Developer of the Year.

Gielis, an Oracle ACE, has been working with Oracle Application Express since its early releases. He supports the Apex Blog Aggregator (apexblogs.info), which aggregates more than 50 Oracle Application Express blogs and highlights the product's features. He has a popular blog on Oracle Technology Network, and conducts Oracle Application Express-related training courses and presentations all over the world. "Having Oracle Application Express inside the database means we provide myself and my customers with everything they need," says Gielis. "Even for nonprofessionals, I can't see a reason to fire up Microsoft Access to create little applications, especially not when someone wants to show data to others. Oracle Database Express Edition and Oracle Application Express are more robust, more scalable, and more secure."



Person SPECS

Name: Dimitri Gielis
Job title: Evangelist, Oracle
Company: Apex Evangelists
Location: Leuven, Belgium
Award: Oracle Application Express
Developer of the Year 2009



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Expert Oracle Application Express

*Fourteen leading lights in Oracle Application
Express share their favorite insights from the field*

John Scott, Dietmar Aust, Martin D'Souza,
Doug Gault, Dimitri Gielis, Roel Hartman, Michael
Hichwa, Sharon Kennedy, Denes Kubicek,
Raj Mattamal, Dan McGhan, Francis
Mignault, and Anton Nielsen

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Agenda



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What Is This Presentation About

- Answer to two questions:
 - Is the APEX Listener a worth alternative (to EPG/OHS)?
 - What advantages does the APEX Listener give me?



What It's NOT

- A definitive guide of the APEX Listener
- How to install a webserver



Outline

- APEX Architecture
- The three choices
- APEX Listener Performance
- APEX Listener Features
- APEX Listener 2.0 and the Oracle Cloud

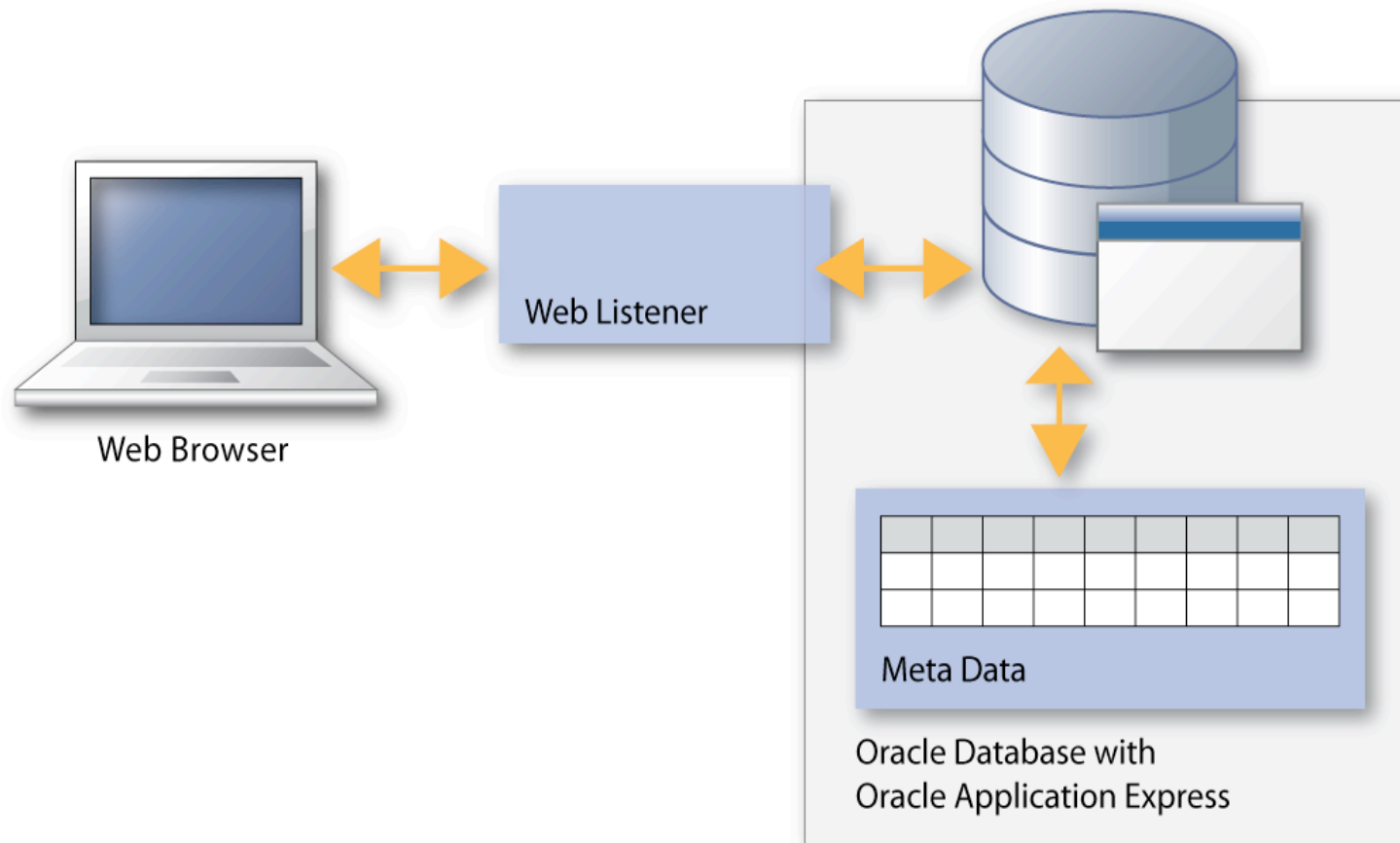


APEX Architecture

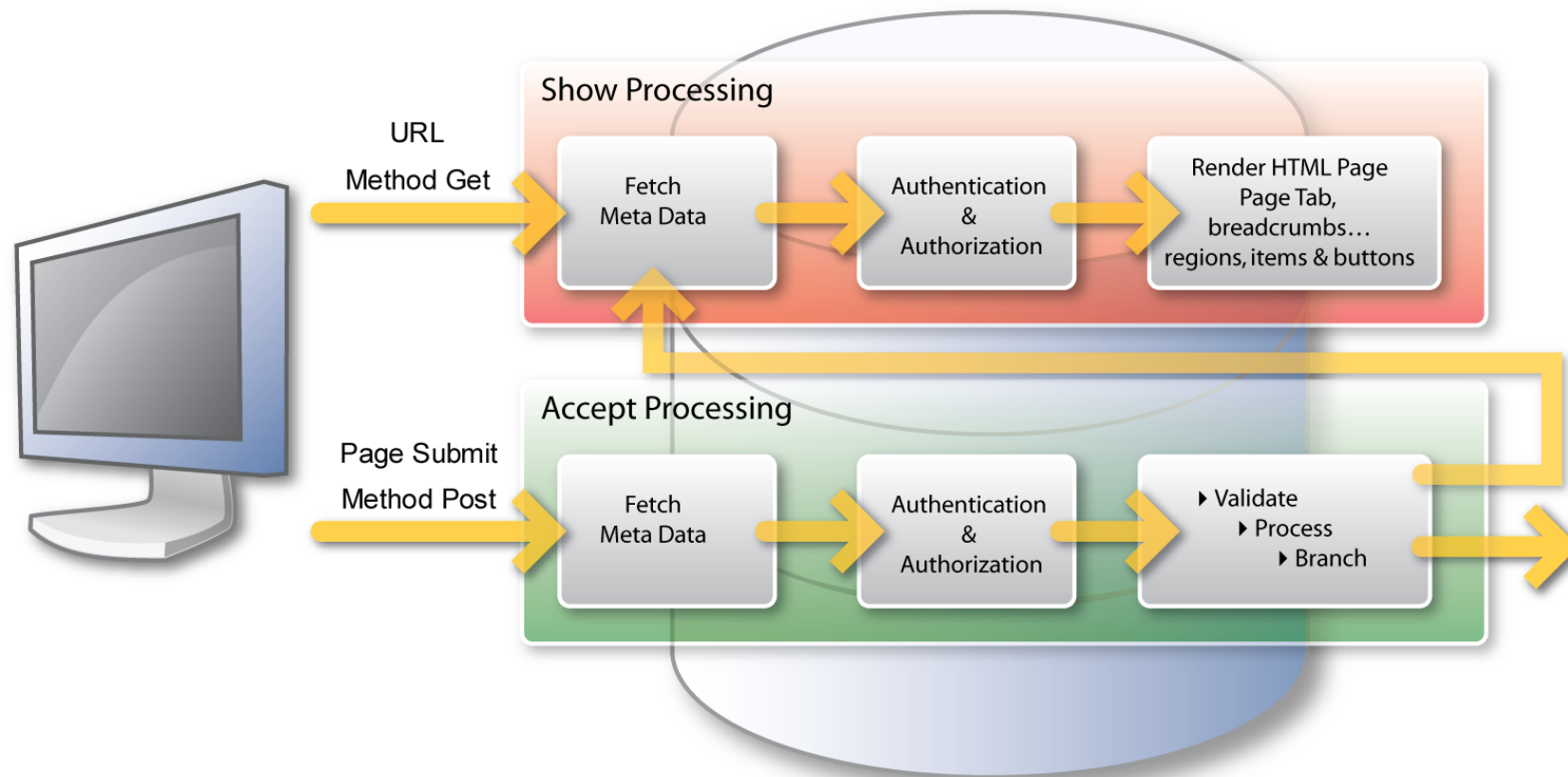


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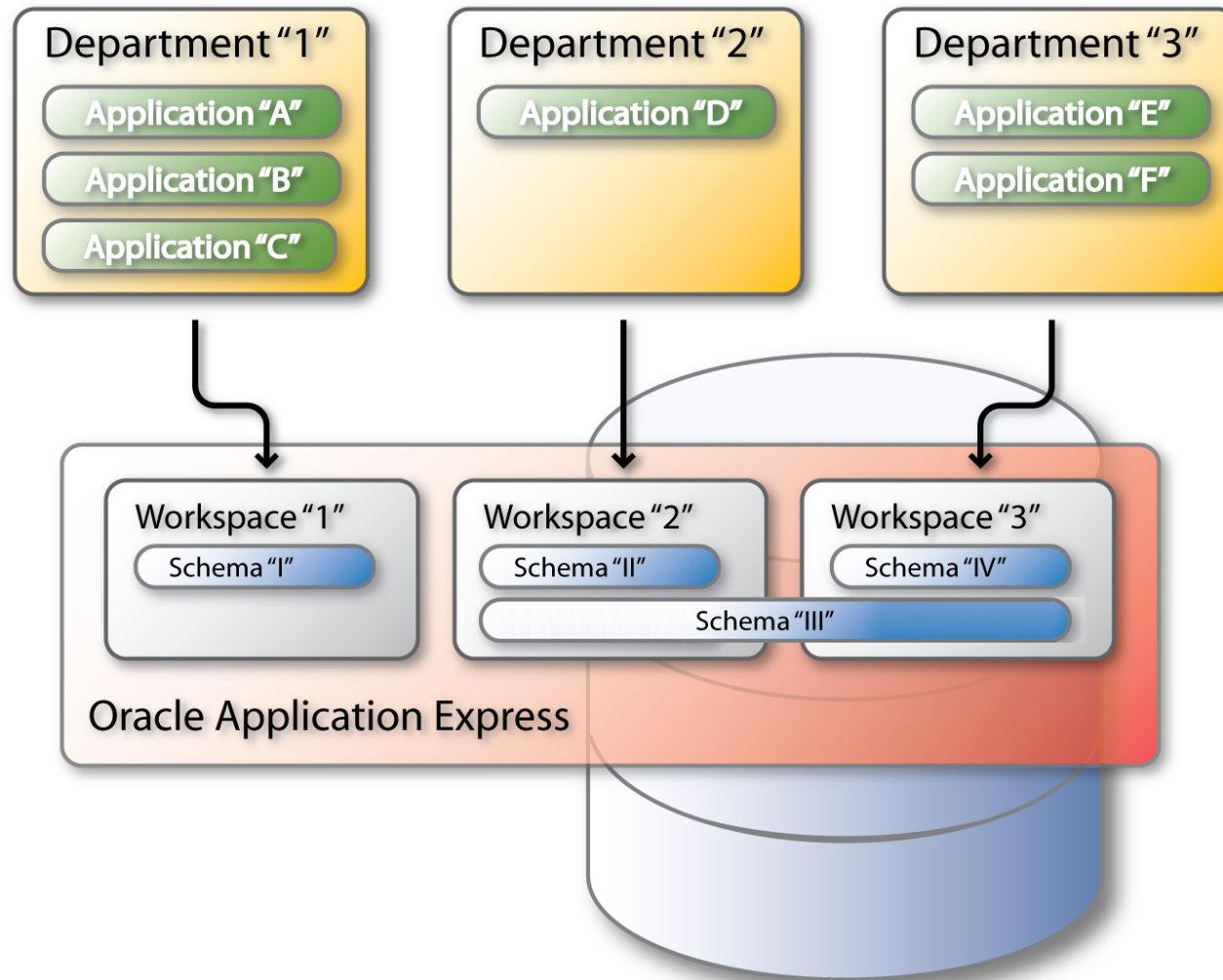
APEX Architecture Overview



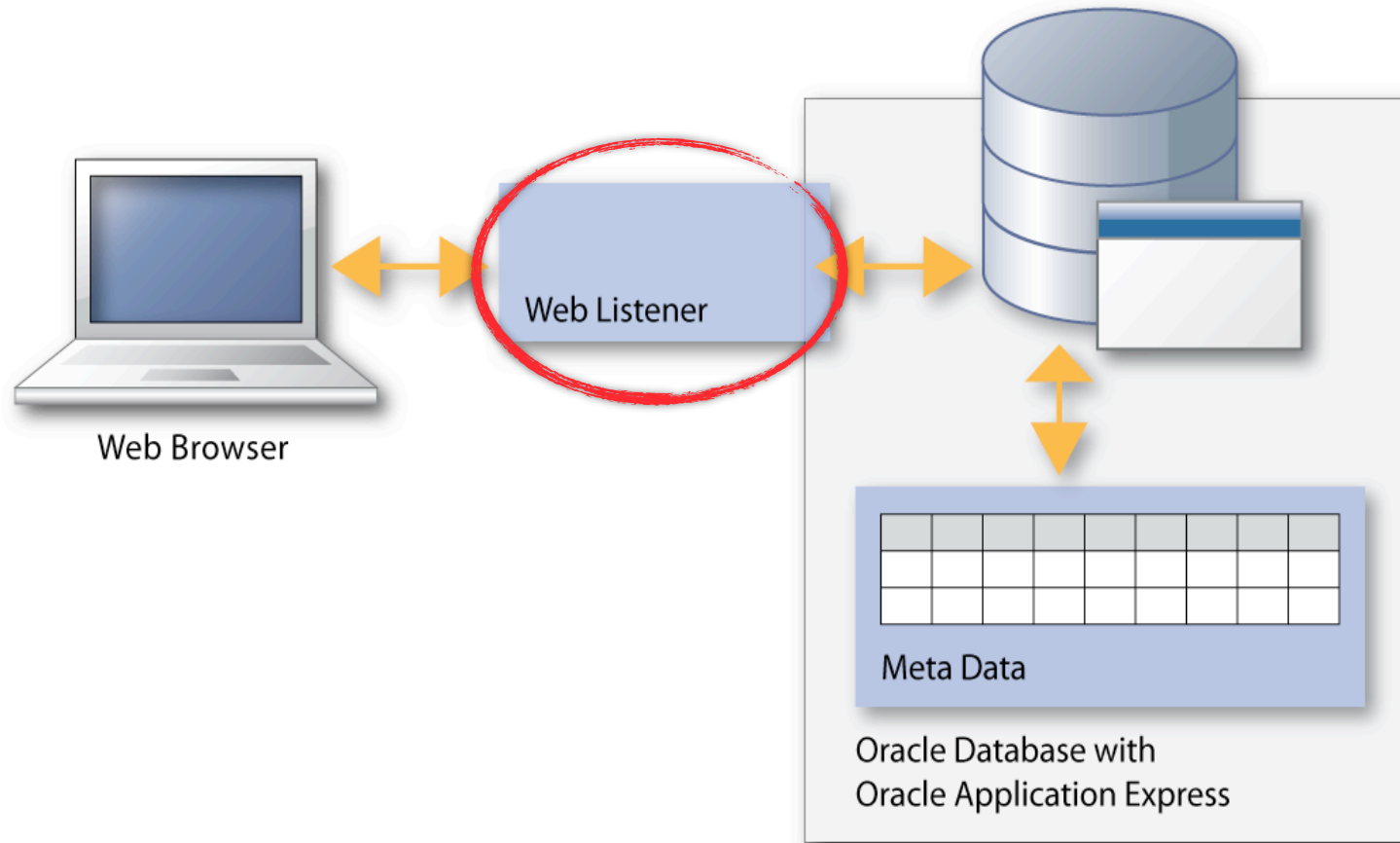
Page Processing



Multi-Tenant SaaS



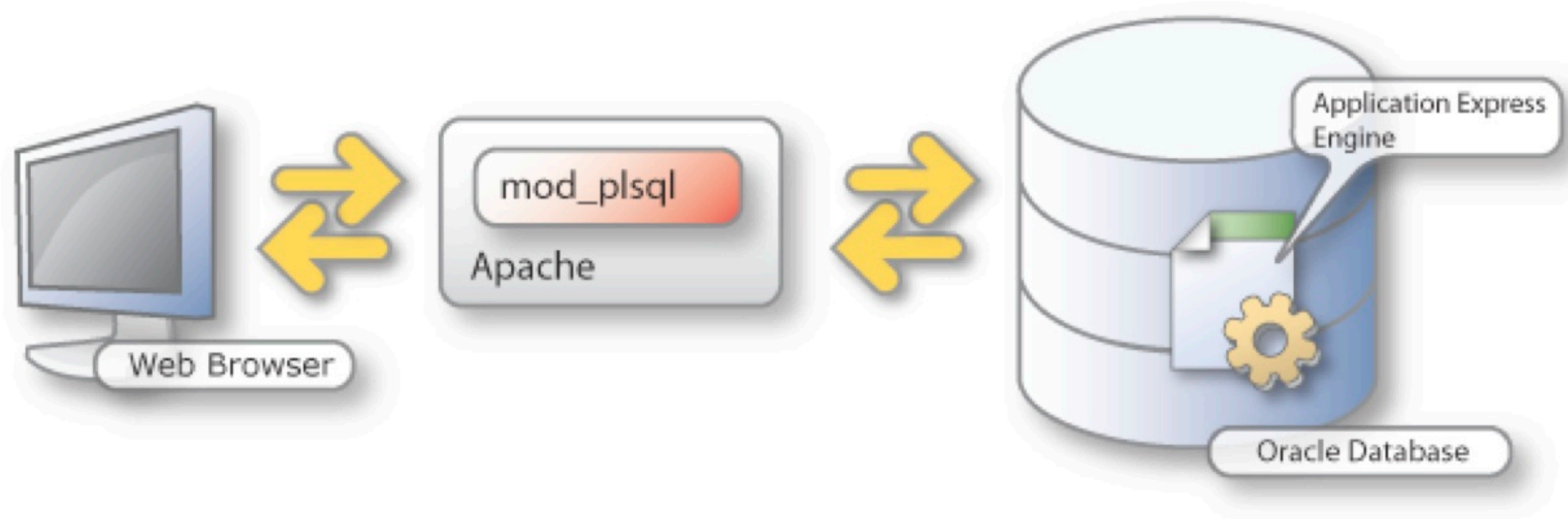
APEX Architecture Overview



The three choices



1) Oracle HTTP Server (OHS)



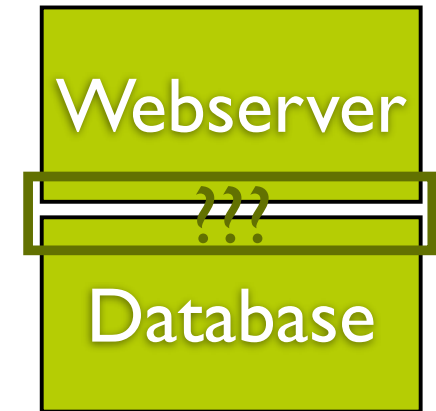
OHS Advantages

- Long history (from 1999/2000)
(shipped with Oracle DB 8.1.7)
- A lot of help available for Apache
- Many modules to extend Apache
- Great configuration options
- Easy debugging (check log files)



OHS Installation Consideration

- Same machine
 - Less moving parts
 - Lower Latency
- Different Machine
 - More secure
 - Resilience (out of control OHS processes don't affect DB machine)
 - Easier to scale out (add more webserver)
 - Check license (!)



OHS Disadvantages

- mod_plsql not longer developed
- mod_plsql disabled or not available on some environments
 - e.g. E-Business Suite R12
- No native GUI
 - Configuration through text files
e.g. dads.conf
- Might be extra cost

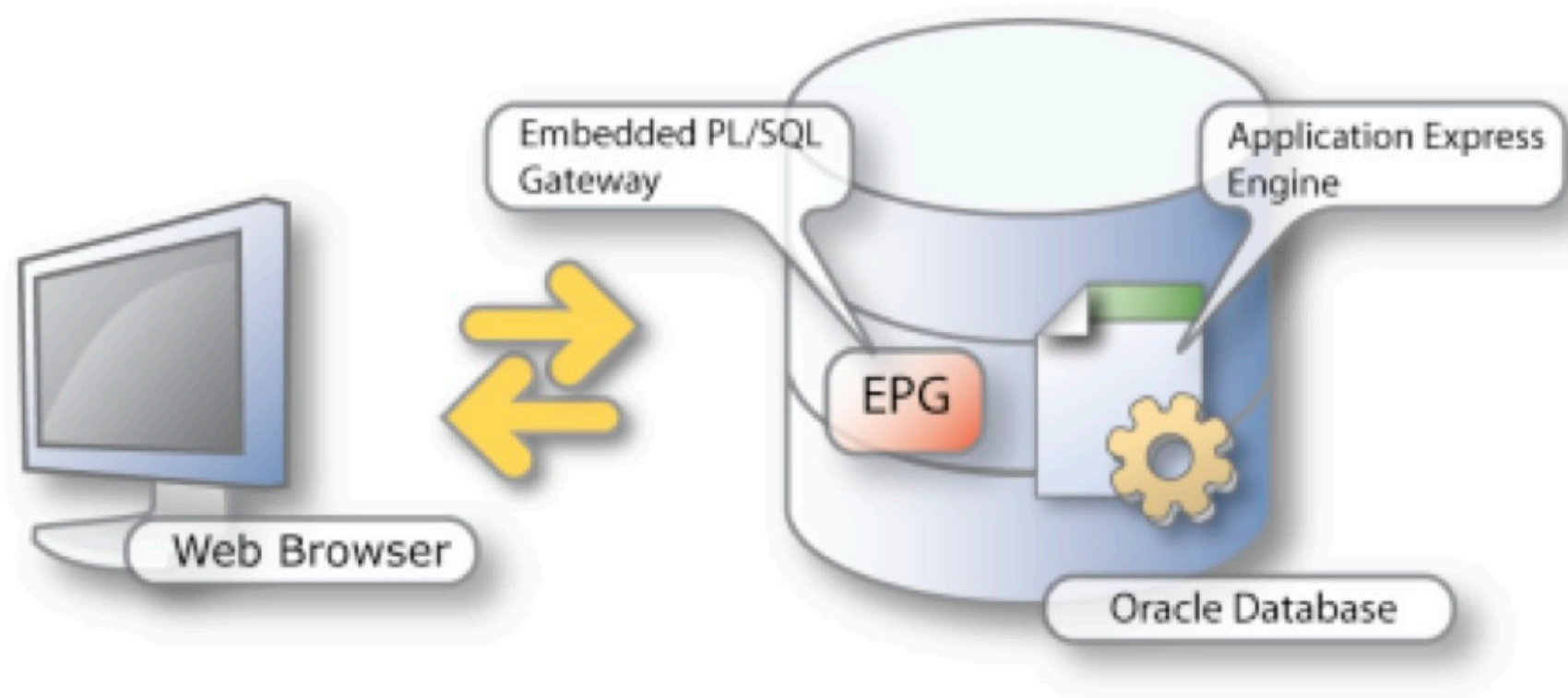


OHS Hints & Tips

- Obfuscate the password in dads.conf
- Make full use of Apache features
 - Virtual hosts
 - Webserver compression
 - Expiry Headers



2) Embedded PL/SQL Gateway (EPG)



EPG Advantages

- Quick and easy setup
 - webserver inside the Database
 - available in DB 10gR2 and higher



EPG Disadvantages

- More database hits
- More difficult to debug (through API)
- Less features / things to tweak

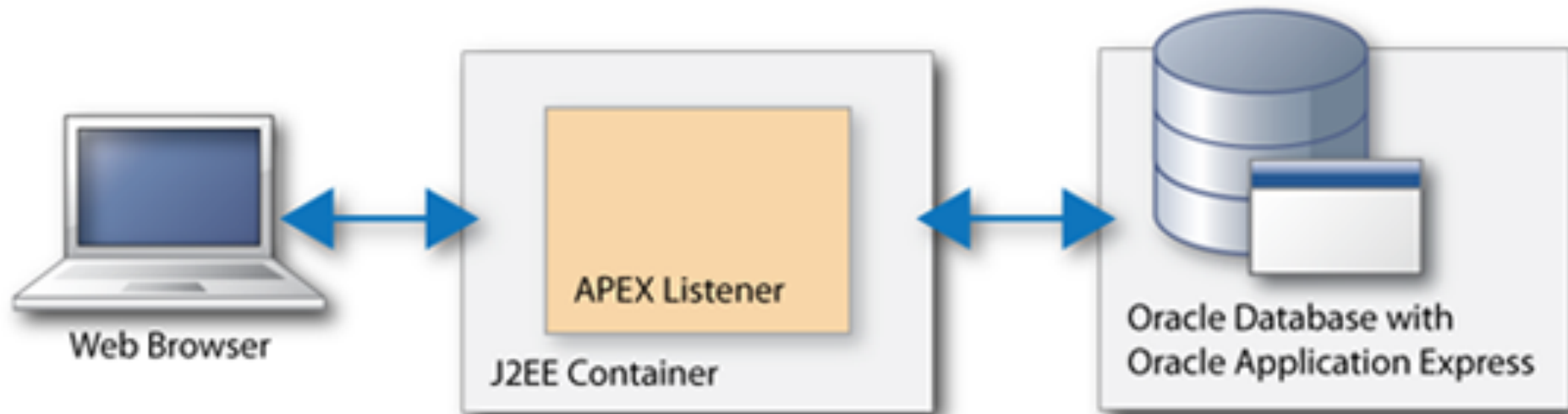


EPG Hints & Tips

- Set SHARED_SERVERS database parameters higher e.g. 15
- Use of dbms_epg package



3) APEX Listener (standalone)



APEX Listener Advantages

- Oracle actively developing it
- Recommended architecture
- GUI Interface for configuration
- Multiple deployment options (standalone, WLS, Glassfish, OC4J)
- Improvements over `mod_plsql` (32K limit)
- New features in APEX (only available when APEX Listener is used)



APEX Listener Advantages

- E-Business Suite only certified with the APEX Listener
- Integration with Java

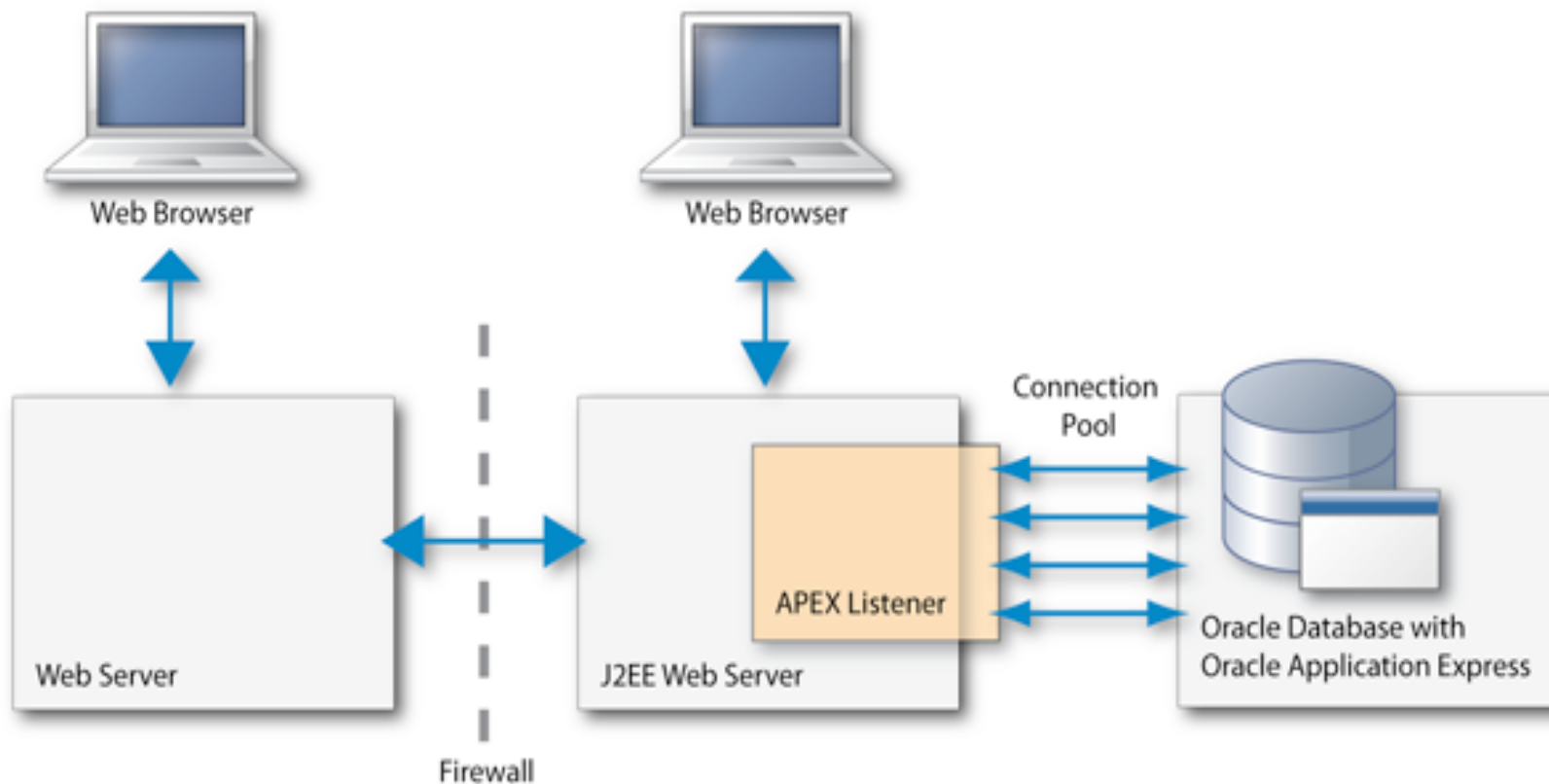


APEX Listener Disadvantages

- Not used that much (yet)
- Only Oracle resources available (compared to others with Apache)
- Waiting for Oracle for new features (personally don't mind)



3) APEX Listener & Reverse Proxy



APEX Listener Performance



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APEX Listener Performance

- Want to compare different webserver
 - OHS 11g (port: 7777)
 - EPG installed (port: 8888)
 - APEX Listener 1.1 on Glassfish (port: 8080)
 - APEX Listener 2.0 (beta) (port: 8081)
- All in same environment (see next slide)



APEX Listener Performance

- The environment (VM)
 - Oracle Linux 2.6.32-100 x86/64
 - Oracle Database 11.2.0.2
 - APEX 4.1.1
 - Sample application: Product Portal
 - Authentication set to “No Authentication”



APEX Listener Performance

- Test scenario
 - JMeter as Proxy to record navigation through Sample app
 - Configure testplan
 - Run the testplan (next slide) for every webserver



JMeterApexOGH3.jmx (/Users/aedimi/Documents/Dimi/Presentations/2012/ogh/research/JMeterApexOGH3.jmx) - Apache JMeter (2.6 r1237317)

File Edit Search Run Options Help

Test Plan - Apex

Thread Group

HTTP Cookie Manager

User Defined Variables

sessionId Regular Expression Extractor

p_flow_id Regular Expression Extractor

p_flow_step_id Regular Expression Extractor

p_instance Regular Expression Extractor

p_page_submission_id Regular Expression Extractor

p_request Regular Expression Extractor

p_md5_checksum Regular Expression Extractor

p_page_checksum Regular Expression Extractor

p_arg_values Regular Expression Extractor

p_arg_names01 Regular Expression Extractor

p_arg_names02 Regular Expression Extractor

p_arg_names03 Regular Expression Extractor

p_arg_names04 Regular Expression Extractor

p_arg_names05 Regular Expression Extractor

p_arg_names06 Regular Expression Extractor

p_arg_names07 Regular Expression Extractor

p_arg_names08 Regular Expression Extractor

p_arg_names09 Regular Expression Extractor

p_arg_names10 Regular Expression Extractor

p_arg_names01name Regular Expression Extractor

p_arg_names02name Regular Expression Extractor

p_arg_names03name Regular Expression Extractor

p_arg_names04name Regular Expression Extractor

p_arg_names05name Regular Expression Extractor

p_arg_names06name Regular Expression Extractor

p_arg_names07name Regular Expression Extractor

p_arg_names08name Regular Expression Extractor

p_arg_names09name Regular Expression Extractor

p_arg_names10name Regular Expression Extractor

p_arg_names01value Regular Expression Extractor

success_msg Regular Expression Extractor

Recording Controller

OHS

EPG

APEX Listener + Glassfish

View Results in Table

Thread Group

Name: Thread Group

Comments:

Action to be taken after a Sampler error

☒ Continue

☐ Start Next Loop

☐ Stop Thread

☐ Stop Test

☐ Stop Test Now

Thread Properties

Number of Threads (users): 40

Ramp-Up Period (in seconds): 0

Loop Count: ☐ Forever 10

☐ Scheduler

APEX Listener Performance Results

- OHS + mod_plsql

	Max	Std. Dev.	Error %	Throughput	KB/sec	Avg. Bytes
208	6127	639.33	0.00%	9.8/sec	157.62	16482.4
33	343	48.10	0.00%	2.6/sec	913.98	362312.0
268	4472	736.44	0.00%	2.6/sec	11.81	4697.3
1274	4844	409.37	0.00%	2.6/sec	44.17	17570.4
14	1758	140.18	0.00%	2.7/sec	10.56	3998.9
14	6127	1257.80	0.00%	19.6/sec	1086.50	56813.5

- EPG

	Max	Std. Dev.	Error %	Throughput	KB/sec	Avg. Bytes
200	6555	604.86	0.00%	9.7/sec	156.54	16484.7
39	343	47.52	0.00%	2.6/sec	905.08	362312.0
354	4090	713.57	0.00%	2.5/sec	11.22	4505.5
1738	6480	428.70	0.00%	2.5/sec	43.55	17571.3
13	1973	153.96	0.00%	2.7/sec	10.40	3998.9
13	6555	1260.31	0.00%	19.4/sec	1078.43	56790.8

- APEX Listener I.I

	Max	Std. Dev.	Error %	Throughput	KB/sec	Avg. Bytes
59	5016	666.79	0.00%	10.8/sec	174.56	16484.6
31	336	53.75	0.00%	2.8/sec	997.34	362311.9
311	3592	673.99	0.00%	2.8/sec	12.31	4474.1
548	5705	651.82	0.00%	2.8/sec	48.49	17571.5
10	1217	144.27	0.00%	3.0/sec	11.65	3998.9
10	5705	1180.48	0.00%	21.7/sec	1202.49	56786.9

APEX Listener Performance Results

- APEX Listener 1.1

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	KB/sec	Avg. Bytes
/pls/apex/f	1200	299	57	599	50.63	0.00%	6.8/sec	109.76	16485.9
/i/flashchart/a...	300	22	5	80	6.60	0.00%	1.7/sec	607.81	362312.0
/pls/apex/apex...	300	154	64	473	83.83	0.00%	1.7/sec	8.18	4876.0
/pls/apex/ww...	300	352	193	397	17.61	0.00%	1.7/sec	29.44	17570.6
/pls/apex/ww...	300	27	7	83	8.00	0.00%	1.7/sec	6.73	3998.9
TOTAL	2400	219	5	599	132.66	0.00%	13.6/sec	756.74	56837.7

- APEX Listener 2.0

Label	# Samples	Average	Min	Max	Std. Dev.	Error %	Throughput	KB/sec	Avg. Bytes
/pls/apex/f	1000	298	57	599	51.31	0.00%	6.8/sec	110.16	16487.0
/i/flashchart/a...	250	22	5	80	6.87	0.00%	1.7/sec	612.64	362312.0
/pls/apex/apex...	250	153	64	473	84.36	0.00%	1.7/sec	8.25	4884.3
/pls/apex/ww...	250	352	193	397	16.82	0.00%	1.7/sec	29.62	17570.6
/pls/apex/ww...	250	27	8	83	7.86	0.00%	1.7/sec	6.77	3998.9
TOTAL	2000	218	5	599	132.65	0.00%	13.7/sec	759.50	56839.2



APEX Listener Features



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APEX Listener 1.1 Features

- No 32K limit
- Native Excel upload
- Integrated security in front of the database
- Caching
- Pre- and Post Processing
- Debugging en Logging features
- RESTfull Webservices (Resource Templates)



APEX Listener 1.1 features

DEMONSTRATION



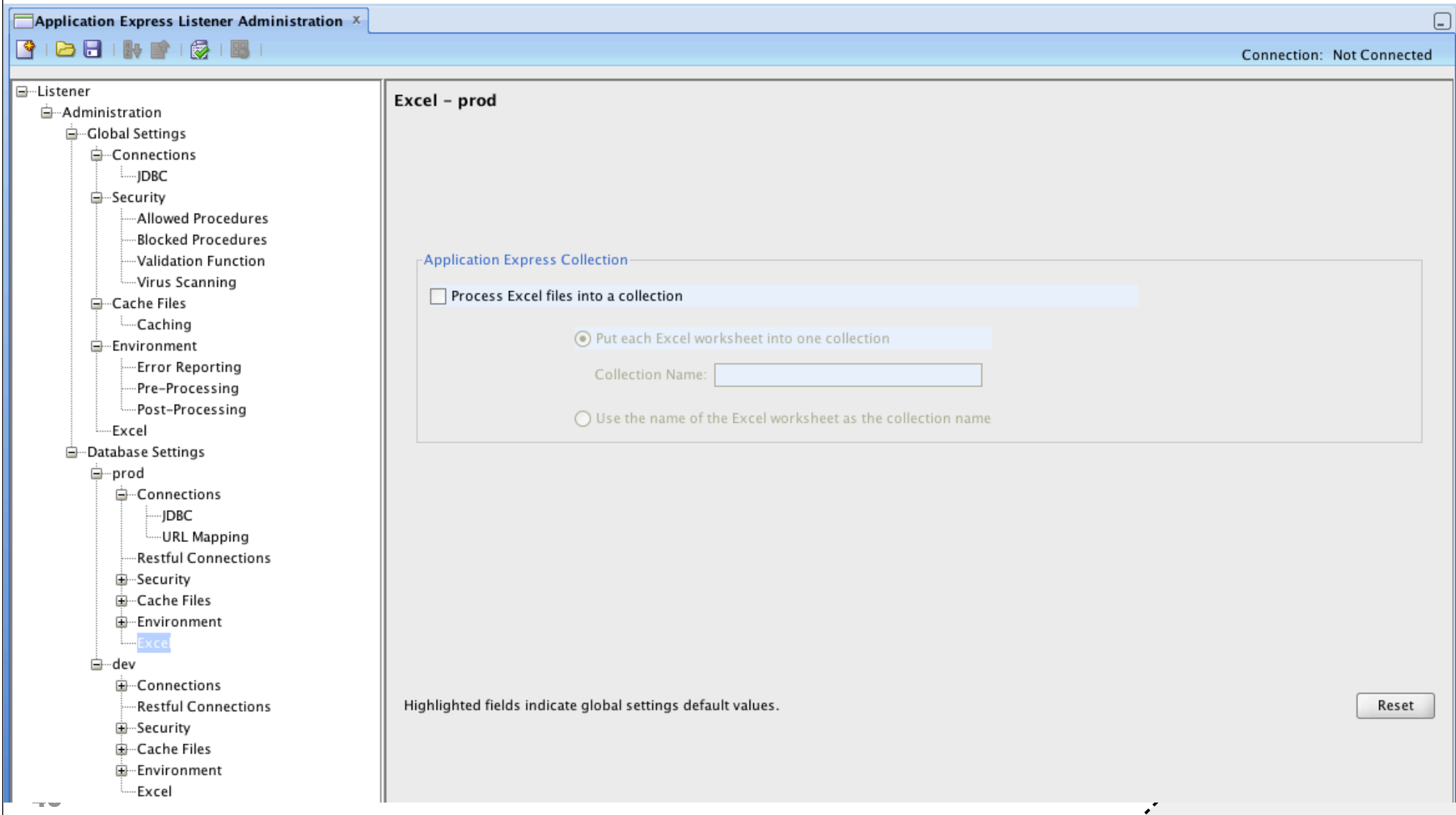
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APEX Listener 2.0 & Oracle Cloud



APEX Listener 2.0

- Complete new configuration screen



APEX Listener 2.0

- RESTful services are much tighter integrated to APEX yet still standalone for non-APEX shops
- RESTful OAuth 2.0 integration



RESTful Services In APEX 4.1.1 (patched)

ORACLE® Application Express

Workspace database-apexevangelisttrial ([Return to Cloud](#)) ([Log](#)

Home Application Builder ▼ SQL Workshop ▼ Team Development ▼ Administration ▼

Home > SQL Workshop > RESTful Services > RESTful Service Module > Resource Template > Resource Handler Help

RESTful Service

oracle.example.hr

employees/

GET

+ Create Handler

employees/{id}

GET

+ Create Handler

+ Create Template

Resource Handler: GET

Cancel

Delete

Apply Changes

Show All Resource Handler Source Parameters

Resource Handler

A resource handler is a query or an anonymous PL/SQL block responsible for handling a particular HTTP method. Although multiple resource handlers can be defined for a resource template, only one resource handler per HTTP method is permitted.

RESTful Service Module: hr/

URI Template: employees/{id}

Method GET

Source Type Query One Row

Requires Secure Access Yes

Pagination Size 25

Source

* Source

```
select * from emp where empno = :id
```

To test the behaviour of the RESTful Service Handler, click the Test button below. For better results, ensure you have a JSON Viewer installed in your browser. If the RESTful Service Handler uses parameters, click the Set Bind Variables button to set test values for the parameters.

Test

Example

Set Bind Variables

APEX Listener 2.0

- Built in virus scanner integration via ICAP



WIKIPEDIA
The Free Encyclopedia

- Main page
- Contents
- Featured content
- Current events
- Random article
- Donate to Wikipedia

- Interaction
 - Help
 - About Wikipedia
 - Community portal
 - Recent changes
 - Contact Wikipedia
- Toolbox
- Print/export
- Languages
 - Deutsch
 - Español
 - Français
 - Português

Article **Talk** Read Edit View history Search

Internet Content Adaptation Protocol

From Wikipedia, the free encyclopedia

The **Internet Content Adaptation Protocol** (ICAP) is a lightweight [HTTP](#)-like protocol specified in [RFC 3507](#) which is used to extend transparent [proxy servers](#), thereby freeing up resources and standardizing the way in which new features are implemented. ICAP is generally used to implement [virus scanning](#), and [content filters](#) in transparent HTTP proxy caches. [Content Adaptation](#) refers to performing the particular value added service (content manipulation) for the associated client request/response.

 This section appears to **contain a large number of buzzwords**. Specific concerns can be found on the [talk page](#). Please help [improve this section](#) if you can. *(September 2011)*

ICAP concentrates on leveraging edge-based devices ([caching proxies](#)) to help deliver [value-added services](#). At the core of this process is a cache that will proxy all [client](#) transactions and will [process](#) them through ICAP [Web servers](#). These ICAP servers are focused on a specific function, for example, ad insertion, [virus](#) scanning, content translation, language translation, or [content filtering](#). Off-loading value-added services from Web servers to ICAP servers allows those same web servers to be scaled according to raw HTTP throughput versus having to handle these extra tasks.

Contents [\[hide\]](#)

- 1 History
- 2 Open source implementations
- 3 Commercial implementations
- 4 External links

History

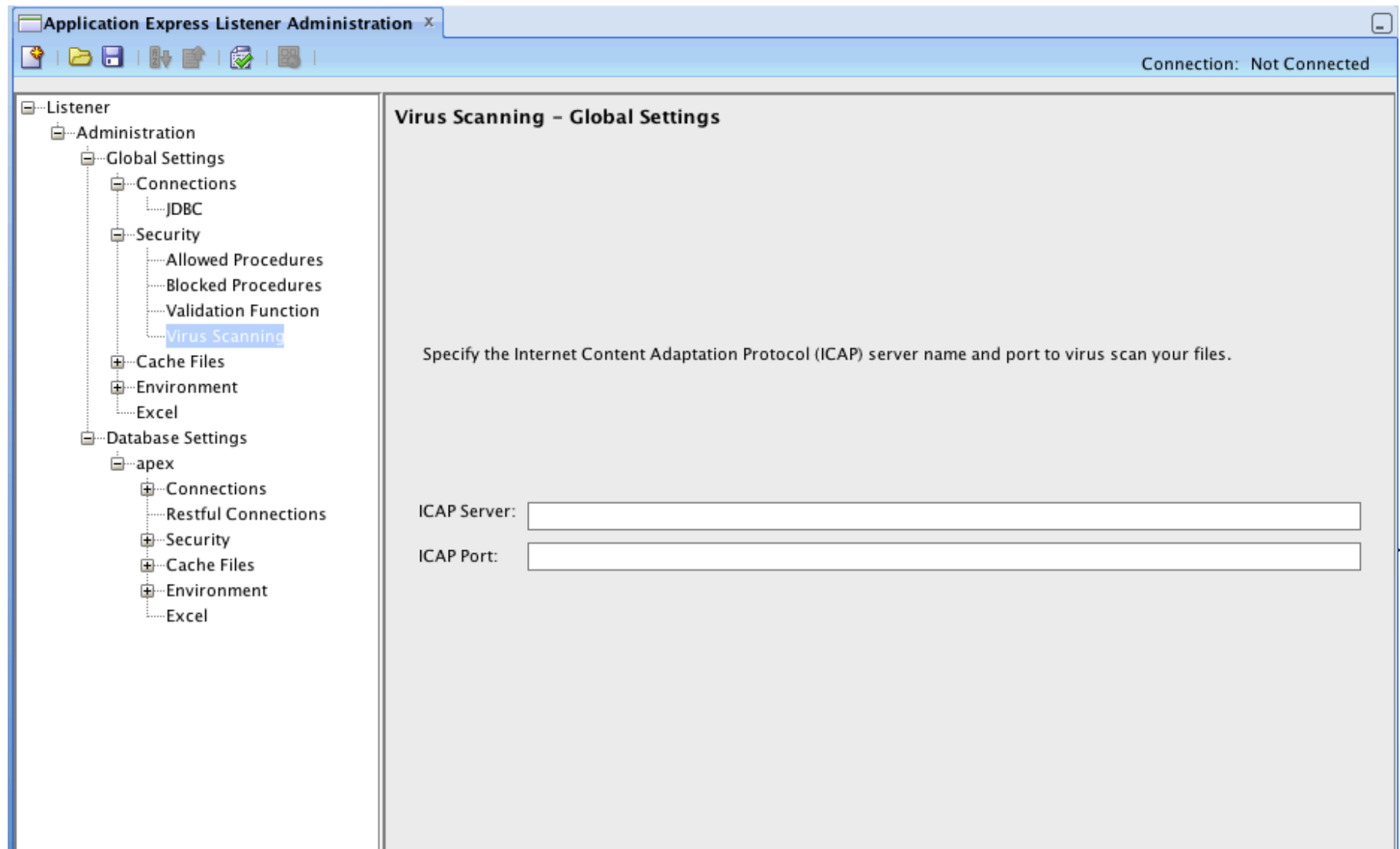
ICAP was proposed in late 1999 by Peter Danzig and John Schuster from Network Appliance. Don Gillies took over the project in the spring of 2000 and enhanced the protocol to allow pipelined ICAP servers and to support all 3 encapsulations of HTTP allowed by HTTP 1.1. Gillies also prototyped the first ICAP client and server for the [NetCache](#) series of internet caches in mid-2000 and produced training materials for vendors. The first demonstration ICAP Server was written in Perl and employed the Debian word-replacement filters to rewrite web pages, skipping over the HTML tags, and translate web pages into "swedish chef" or "jive" in real time.

Open source implementations

- [ICAP-server.sf.net](#) [\[P\]](#) (Python, multiplatform)
- [Squid 3.0](#) (C, multiplatform)
- [CrespySpace](#) [\[P\]](#) (ICAP server, Java, multiplatform)

APEX Listener 2.0

- Configuration of Virus scanner



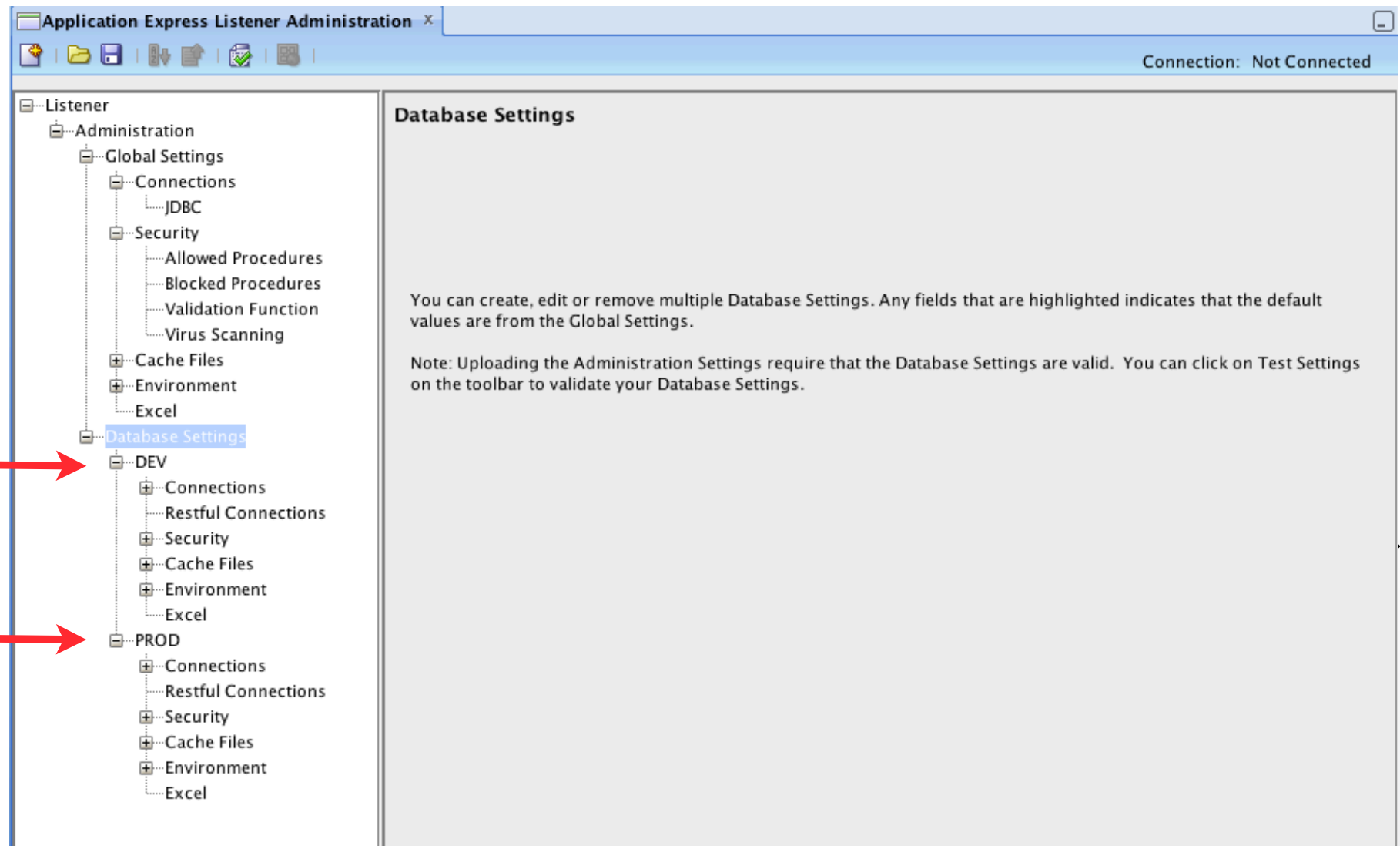
APEX Listener 2.0

- Multi DB Routing in URLs based on url regex matching. For example:
 - `http://mydomain1.myhost.com/` -> goes to DB 1
 - `http://mydomain1.myhost.com/apex3` -> goes to DB 3
 - `http://mydomain2.myhost.com/` -> goes to DB 2

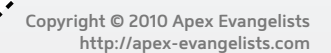
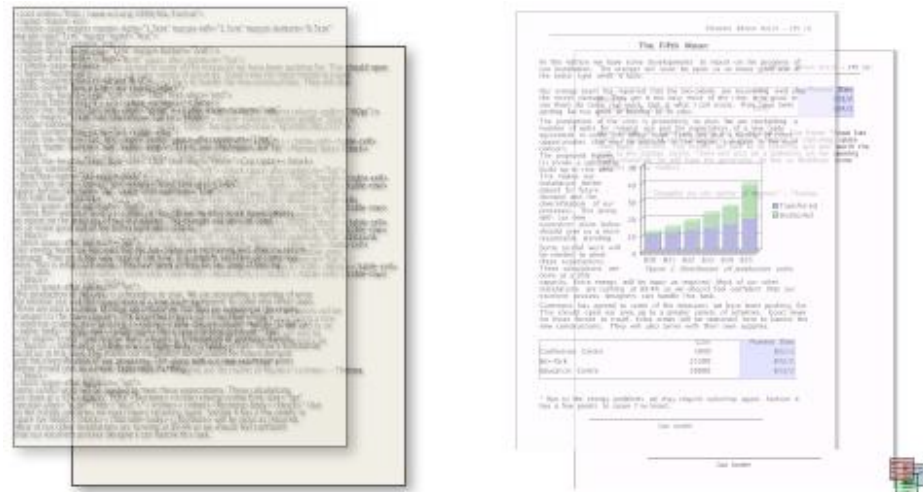


APEX Listener 2.0

- Multiple environments configuration screen



- FOP 2 PDF integration



APEX Listener 2.0 & Oracle Cloud

ORACLE PUBLIC CLOUD

Home | Offerings ▾ | How It Works | Why Oracle? | Resources ▾

Oracle Database Cloud Service

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Overview | Features | Specs | **Architecture**

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JAVA | **REST** | APEX | SQL DEVELOPER

Application Server

WEB SERVER
Apache HTTP Server

APPLICATION SERVER
WebLogic / APEX Listener

DATA UPLOAD
Data Pump

IDENTITY MANAGEMENT
IDM Access Control

Database

DATABASE CLOUD SERVICE ↔

DATABASE CLOUD SERVICE ↔

DATABASE CLOUD SERVICE ↔

DATABASE CLOUD SERVICE ↔

11gR2 EE | Application Express | RAC One Node | DataGuard

Storage

Database Cloud Service

The Oracle Database Cloud Service gives you the world's leading database, instantly available, which you can use with your choice of development tools. The Database Cloud Service can grow as your needs change.

The Database Cloud Service comes with Oracle Application Express, a rapid application development (RAD) tool, full support for Java applications, and a Web service wizard for quickly creating industry standard Web services to access your data.

The Oracle Database Cloud Service is enterprise strength, with protection against a wide variety of failures and industry standard best maintenance practices - all done automatically.

You get a complete set of tools to manage your Oracle Database Cloud Service, from creating, modifying and viewing database objects to running SQL scripts and loading data.

You even get a set of business productivity applications to install with just a few clicks, included in the Database Cloud Service at no additional charge.

Summary



Summary

- APEX Architecture
- The three choices
- Why the APEX Listener (Performance, Features)
- APEX Listener 2.0 and the Oracle Cloud



Q&A

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