Cookie Monster
Understanding how and when to use browser cookies with APEX
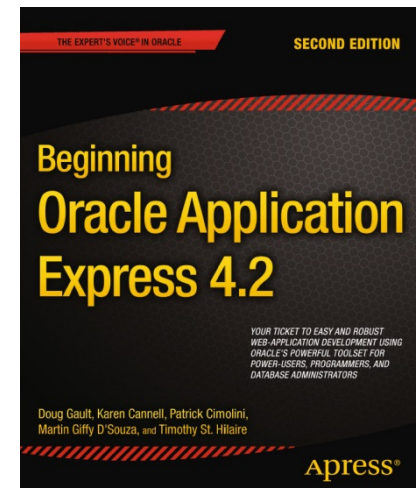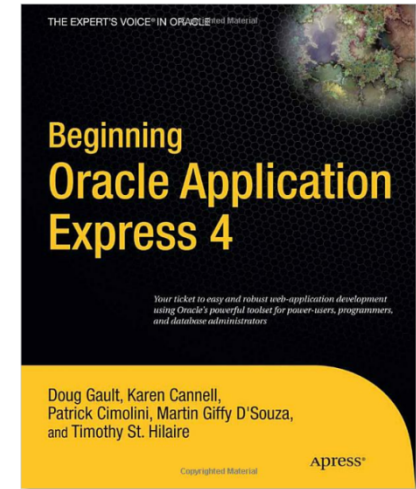
Kscope14

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Introduction

Tim St. Hilaire

- System Integrator

- Problems Solver

- Pragmatist

- Technology Enthusiast

- APEX Fan

- Enkitec Product Developer

About Accenture Enkitec Group

- Result of acquisition of Enkitec by Accenture in May 2014
- Global systems integrator focused on the Oracle platform
- Headquartered in Dallas, Texas
- Consultants average 15+ years of Oracle experience
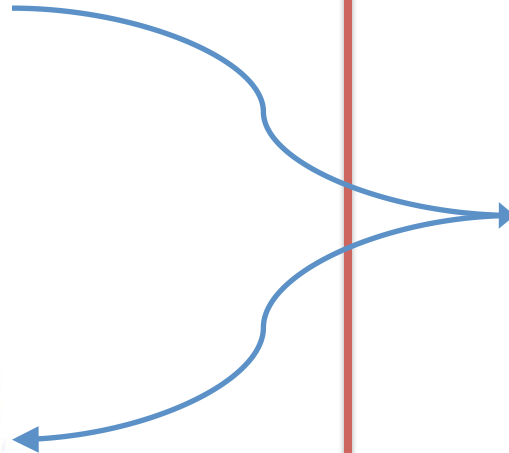- ~20 Oracle ACE members on staff

Agenda

- Super Basic
- Anatomy of a Cookie
- Cookies in APEX
- Another Way of Thinking
- Technical Notes
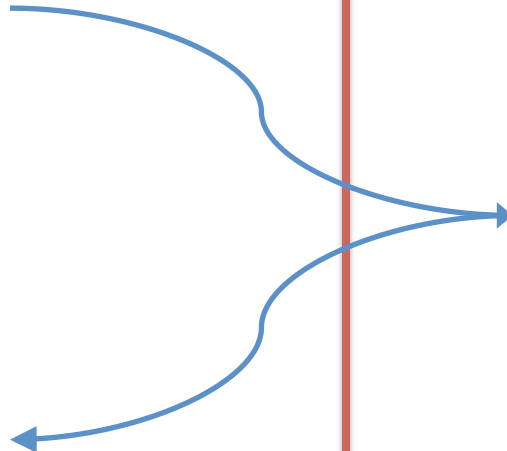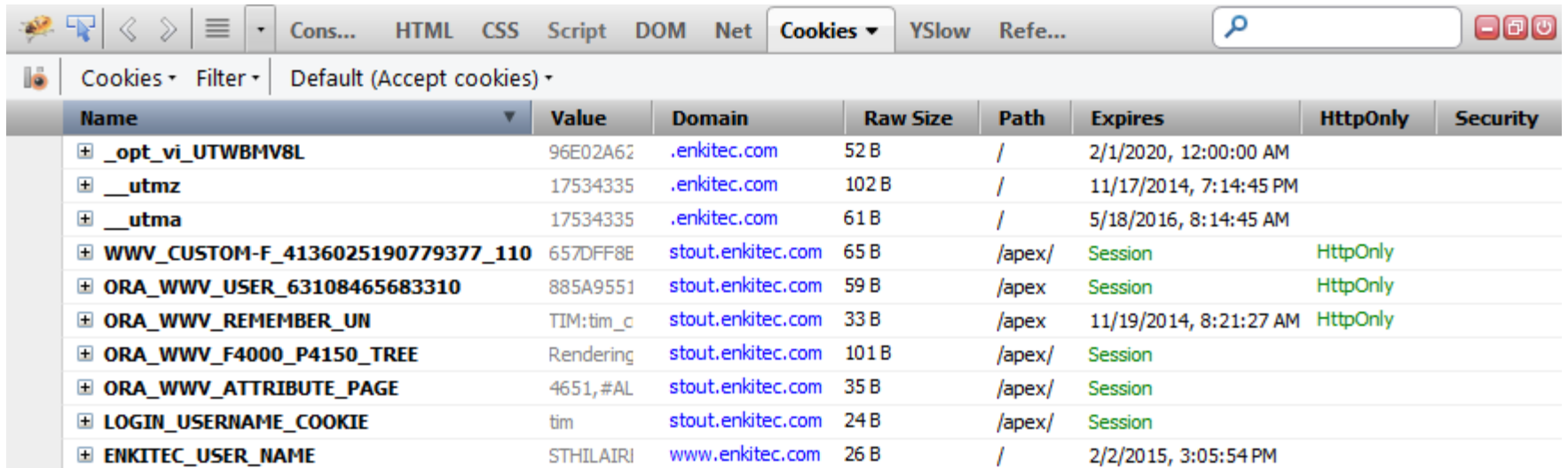- References

Flow

Browser

Server

Flow

Browser

Server

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What are Cookies.... Really

- Small bits of text data that are shared by the browser.

- Can be for any purpose

Name		Value	Domain	Raw Size	Path	Expires	HttpOnly	Security
⊞	_opt_vi_UTWBMV8L	96E02A62	.enkitec.com	52 B	/	2/1/2020, 12:00:00 AM		
⊞	__utmz	17534335	.enkitec.com	102 B	/	11/17/2014, 7:14:45 PM		
⊞	__utma	17534335	.enkitec.com	61 B	/	5/18/2016, 8:14:45 AM		
⊞	WWV_CUSTOM-F_4136025190779377_110	657DFF8E	stout.enkitec.com	65 B	/apex/	Session	HttpOnly	
⊞	ORA_WWV_USER_63108465683310	885A9551	stout.enkitec.com	59 B	/apex	Session	HttpOnly	
⊞	ORA_WWV_REMEMBER_UN	TIM:tim_c	stout.enkitec.com	33 B	/apex	11/19/2014, 8:21:27 AM	HttpOnly	
⊞	ORA_WWV_F4000_P4150_TREE	Rendering	stout.enkitec.com	101 B	/apex/	Session		
⊞	ORA_WWV_ATTRIBUTE_PAGE	4651,#AL	stout.enkitec.com	35 B	/apex/	Session		
⊞	LOGIN_USERNAME_COOKIE	tim	stout.enkitec.com	24 B	/apex/	Session		
⊞	ENKITEC_USER_NAME	STHILAIRI	www.enkitec.com	26 B	/	2/2/2015, 3:05:54 PM		

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Are Cookies Bad For You?

- Cookies have been given a bad reputation
  - Developer Designs
  - Hackers
  - Over Use by Advertisers
- Cookies have useful functionality

- As with real cookies…….
  Too many is probably not good for you

The Anatomy of a Cookie

Name	Value	Domain	Raw Size	Path	Expires	HttpOnly	Security
⊞ _opt_vi_UTWBMV8L	96E02A62	.enkitec.com	52 B	/	2/1/2020, 12:00:00 AM		
⊞ __utmz	17534335	.enkitec.com	102 B	/	11/17/2014, 7:14:45 PM		
⊞ __utma	17534335	.enkitec.com	61 B	/	5/18/2016, 8:14:45 AM		
⊞ WWV_CUSTOM-F_4136025190779377_110	657DFF8E	stout.enkitec.com	65 B	/apex/	Session	HttpOnly	
⊞ ORA_WWV_USER_63108465683310	885A9551	stout.enkitec.com	59 B	/apex	Session	HttpOnly	
⊞ ORA_WWV_REMEMBER_UN	TIM:tim_c	stout.enkitec.com	33 B	/apex	11/19/2014, 8:21:27 AM	HttpOnly	
⊞ ORA_WWV_F4000_P4150_TREE	Rendering	stout.enkitec.com	101 B	/apex/	Session		
⊞ ORA_WWV_ATTRIBUTE_PAGE	4651,#AL	stout.enkitec.com	35 B	/apex/	Session		
⊞ LOGIN_USERNAME_COOKIE	tim	stout.enkitec.com	24 B	/apex/	Session		
⊟ ENKITEC_USER_NAME	STHILAIRI	www.enkitec.com	26 B	/	2/2/2015, 3:05:54 PM		

Cookies ▾ Filter ▾ Default (Accept cookies) ▾

Value

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Domain

- Cookies from different sites are separated by Domain

- Browsers only send cookies for the current domain

- Super Cookies (*.com, *.org) are (and should be) blocked by most browsers

Path

- Setting a Path dictates when a cookie is sent by the browser.
- Path cookies are hierarchical, meaning that cookies at higher path value will be sent when lower paths are requested

Example: http://domain/application/area/sub_area

      Cookie for: /application/area/sub_area
      Cookie for: /application/area
      Cookie for: /application
      Cookie for: /

Expires

Session: When the browser is closed, the cookie value will be lost

Date: Configurable date to allow persistence of a cookie after the browser has been closed

HTTP_ONLY

- What is HTTP_ONLY?

Modern browsers respect the separation of cookies that should not be available to JavaScript

Reduces the risk of malicious JavaScript from reading or adjusting the cookie values

Secure

- What is a secure cookie?

Only sent (by browser) when using HTTPS

Secure cookies can be received via HTTP

Debugging Tools

- Different browsers provide different tools
- Cookies can be added, removed, and edited
- Most modern browsers will include easy visibility into the cookies being used

APEX Cookies

-or-

where did that cookie go?

Page Render and Processing

Page Render

- Can be counter intuitive

- You can not read a cookie on page render to make changes to your page

Security by Design

- (Opinion) The reason cookies are not as valuable to APEX users is because of easy DB access and session framework.

- How can cookies provide value to an APEX application?

Another Approach to Authentication

Amazon Use Case

Demonstration

Using Cookie Authentication

Technical Utilities

Technologies that are related

PL/SQL Packages

- SYS.UTL_HTTP is not available (by default grants)
- OWA_COOKIE is available
- OWA_UTIL is available

OWA Cookie Record

- TYPE vc_arr IS
  - TABLE OF VARCHAR2(4000) INDEX BY BINARY_INTEGER

- TYPE COOKIE IS RECORD (

  name VARCHAR2(4000),

  vals vc_arr,

  num_vals INTEGER);

References

- [11.2 - OWA_COOKIE](#)
- [11.2 - OWA_UTIL](#)
- [11.2 - UTL_HTTP](#)
- http://en.wikipedia.org/wiki/HTTP_cookie
- [W3C - Platform for Privacy Preferences](#)
- [How to Block All Cookies Except for Sites you use](#)
- [Remember Me Login – Christian Rokitta](#)

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Questions and Comments