



Cookie Monster

*Understanding how and when to use
browser cookies with APEX*

Kscope14

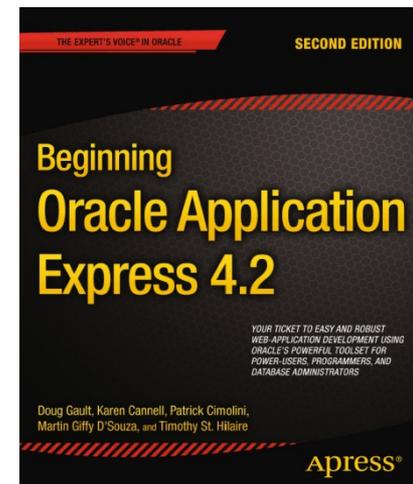
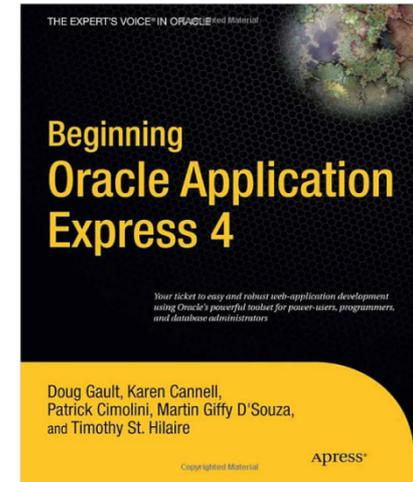
St. Hilaire



Introduction

Tim St. Hilaire

- System Integrator
- Problems Solver
- Pragmatist
- Technology Enthusiast
- APEX Fan
- Enkitec Product Developer



About Accenture Enkitech Group

- Result of acquisition of Enkitech 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

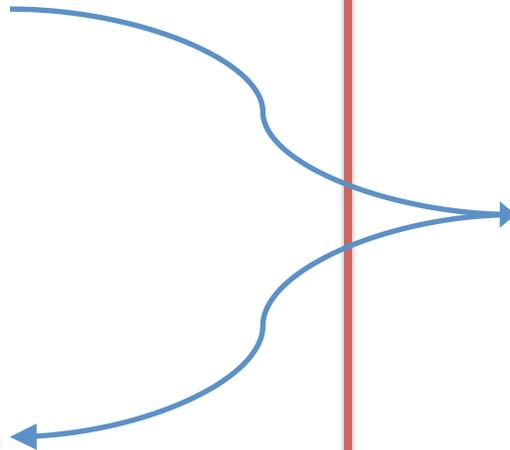
- Super Basic
- Anatomy of a Cookie
- Cookies in APEX
- Another Way of Thinking
- Technical Notes
- References

Flow

Browser



Server

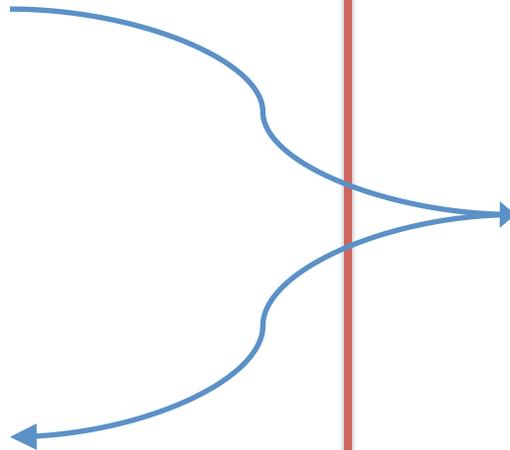


Flow

Browser

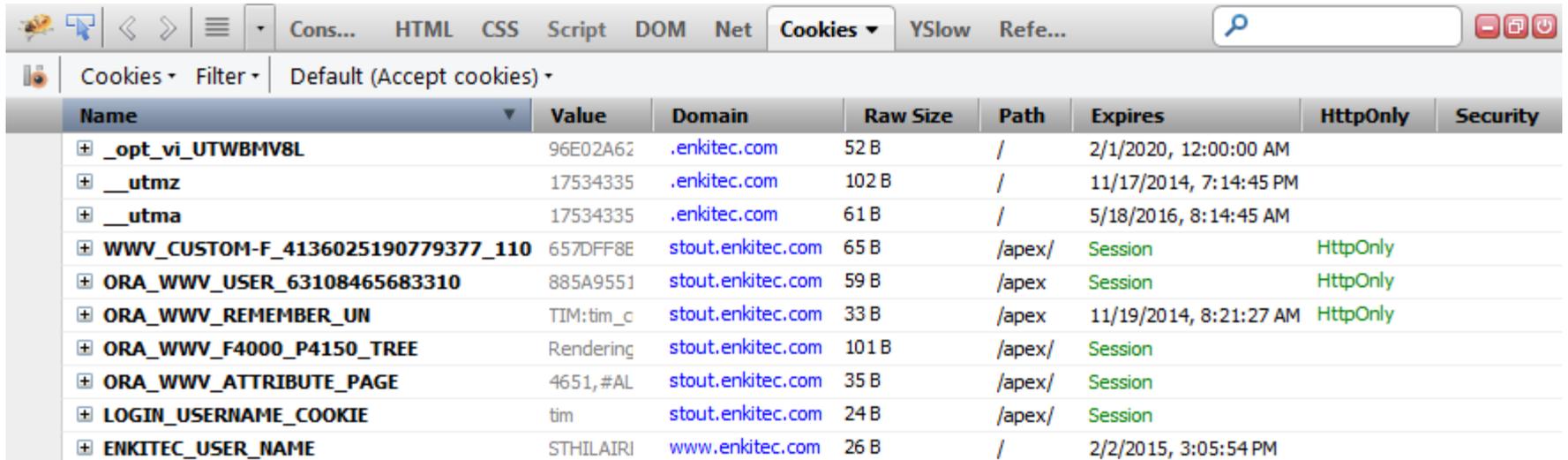


Server



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		

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

🍪 Cookies ▾ Filter ▾ Default (Accept cookies) ▾

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		
⊕ WWW_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		

Value

STHILAIRE

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

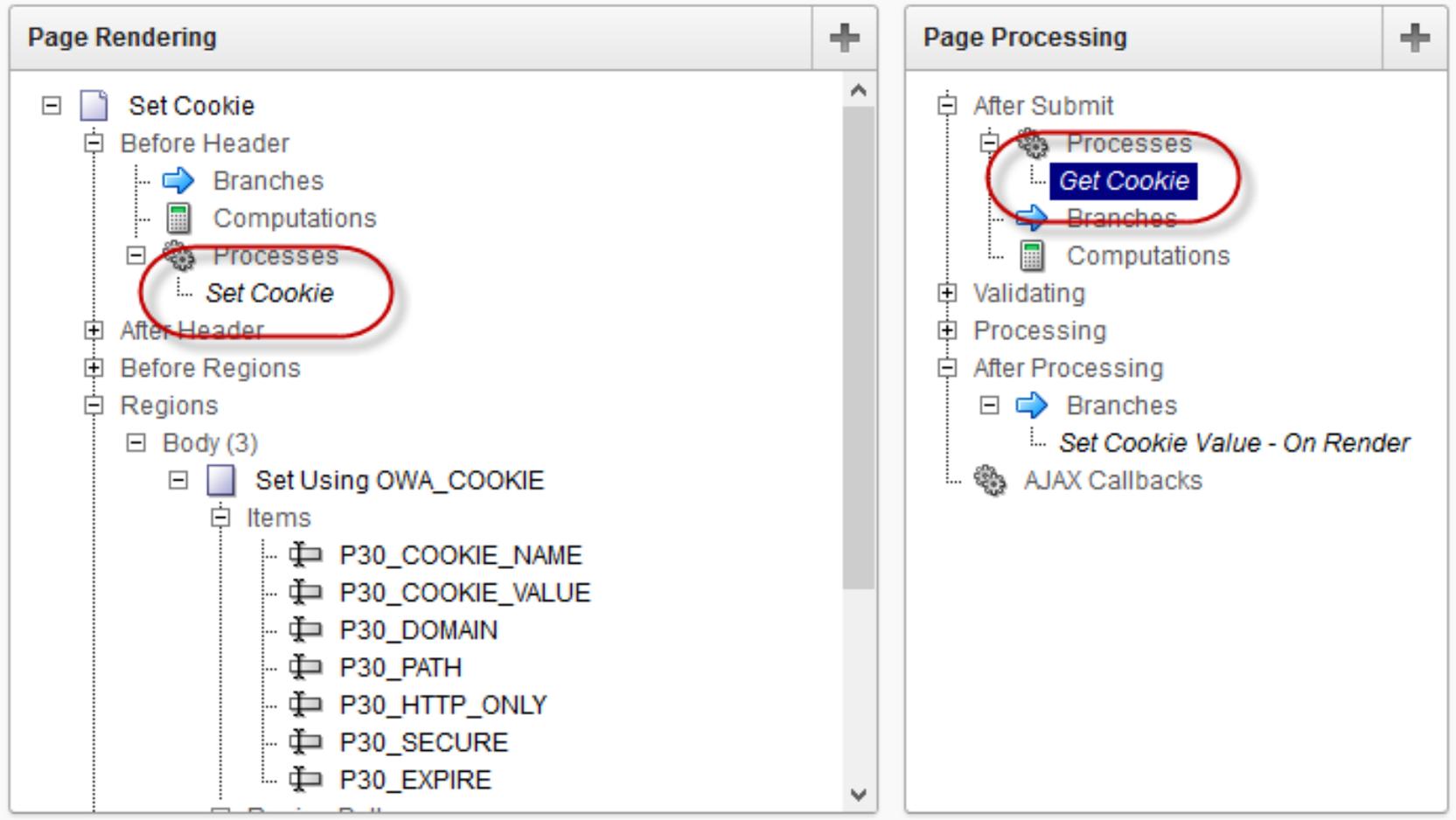
- Different browsers provide different tools
- Cookies can be added, removed, and edited
- Most modern browsers will include easy visibility into the cookies being used

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

The screenshot shows the Amazon.com homepage with the following elements:

- Header:** Amazon Prime logo, navigation links for "Tim's Amazon.com", "Today's Deals", "Gift Cards", "Sell", and "Help". A "Father's Day Savings" banner is sponsored by DeWalt, featuring a power drill and a "Shop now" link.
- Navigation:** "Shop by Department" dropdown, a search bar with "All" selected and a "Go" button, and user account links for "Hello, Tim", "Your Account", "Your Prime", "Cart", and "Wish List".
- Product Categories:** Instant Video, MP3 Store, Cloud Player, Kindle, Cloud Drive, Appstore for Android, Digital Games & Software, and Audible Audiobooks.
- Kindle Promotion:** "Get It Now, Pay Over Time" with the text "No interest. No finance charges. No credit check." Two Kindle devices are shown. The Kindle Fire HD is priced at \$27.80/mo plus tax, and the Kindle is priced at \$13.80/mo plus tax. Both include "Learn more" links.
- Amazon Fire TV:** A promotion for the Amazon Fire TV device, priced at "ONLY \$99", with a "Visit the Amazon Fire TV site" link.
- Eucerin Advertisement:** A banner for Eucerin skin cream with the tagline "Calm. Comfortable. Confident." and a "Shop now" button. It includes a customer review: "Average Amazon.com Customer Review: ★★★★★ (36) 5/7/14" and a testimonial: "★★★★★ Excellent Creme 'I use it every night and keeps my skin moist every day. Best skin cream I have ever tried for dry skin.'" An "Advertisement" icon is in the bottom right.
- Story:** "Keeping Dancers on Their Toes" featuring a ballerina. The text reads: "When an Arizona mom made a padded board to help her young ballerina stretch, the dancing world beat a path to her door." It includes a quote: "> 'We were stunned'" and a link: "> Shop Superior Arch". A sub-headline reads: "One of thousands of small businesses thriving because of Amazon customers."
- Footer:** A link for "Related to Items You've Viewed".

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

