

PUBLIC SUFFIX LIST

A VOLUNTARY “RAINBOW BRIDGE” BETWEEN
DOMAINS AND APPS/DEVELOPERS

ICANN DNS SYMPOSIUM

Santa Marta, Columbia
September 25, 2024

Jothan FRAKES

RrSG Vice Chair, TechOps / SSAC

CEO, PLISK
Volunteer, PSL

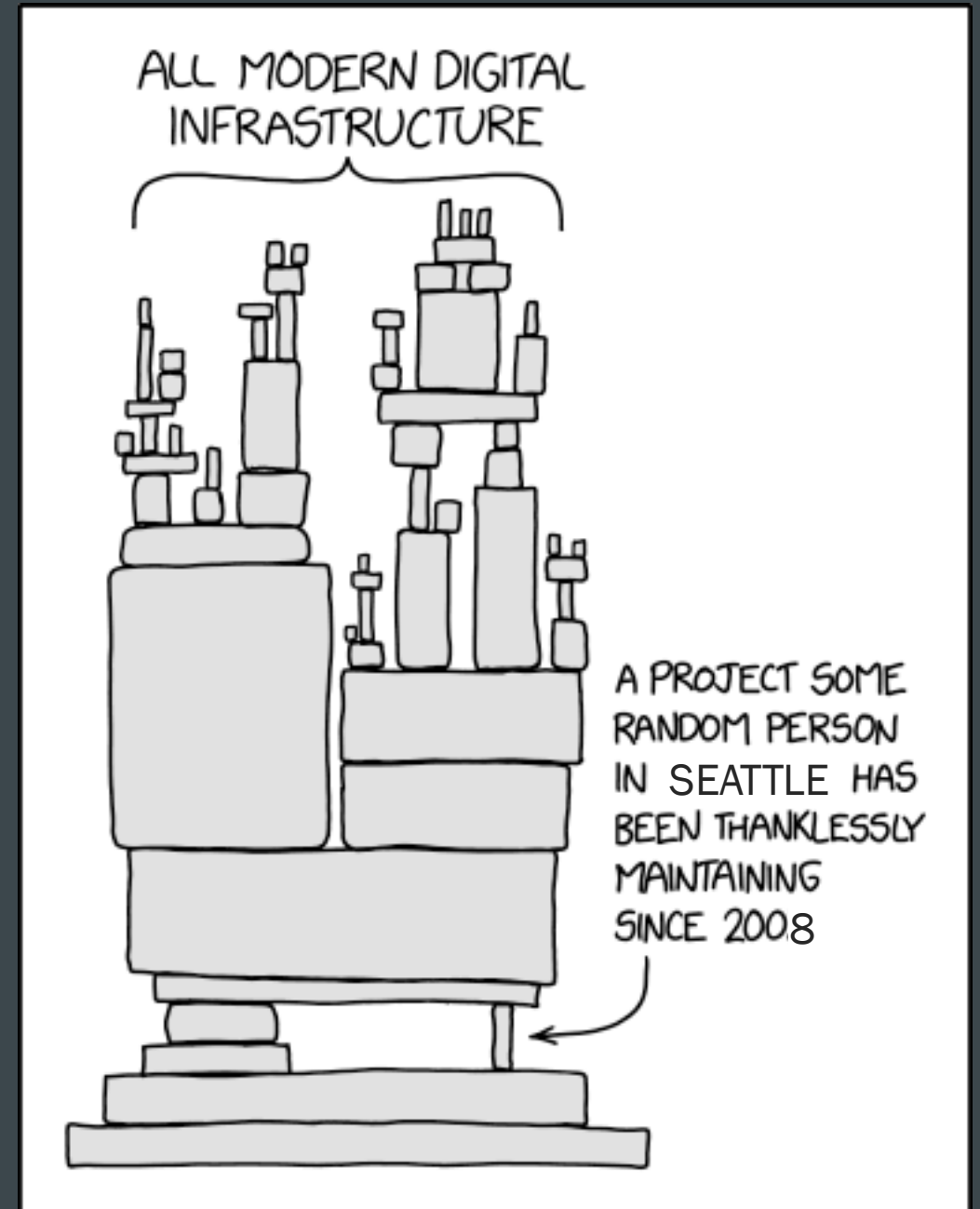
THIS TALK

WHAT IS THE PSL

DEVS / “REAL WORLD”
PERSPECTIVE

RAINBOW BRIDGE / UA
BENEFIT

WHAT IS THE PSL



THE PSL IS

AN EVER-EXPANDING
CATALOG OF ICP-3
OR I* VETTED TLDs

FREE AND PUBLICLY
AVAILABLE

MAINTAINED ON
GITHUB BY
VOLUNTEERS

VETTED / VALIDATED
CHANGES, TRACKED
WITH VERSION
CONTROL

WIDELY USED AND
INCORPORATED

NOT MAINTAINED BY
ICANN/IANA

(FORMERLY MOZILLA)
**PUBLIC SUFFIX
LIST**

- EXPANDS ICANN/IANA PUBLIC SUFFIX LIST (TLDs alpha-by-domain.txt) WHICH LISTS ONLY TLD
- RESPECTS ICP-3 “ONE ROOT”
 - REJECTS ALT-ROOT REQUESTS
- DESCENDS INTO STUBS (CO.UK, COM.AU descendants vs only .UK, .AU)
- ALSO HOLDS ‘PSEUDO’ / PRIVATE SECTION
- GITHUB, SUBDOMAIN, OTHER descendants of ICANN PSL that seek to operate as-if TLD (“effective TLD”)

SOME CAVEATS ON PSL

-
- LEAST AWFUL, BEST MAINTAINED RESOURCE OF ITS KIND
 - ENTIRELY VOLUNTEER CONTRIBUTOR/MAINTAINERS
 - NO SERVICE LEVELS, WARRANTY OR GUARANTEE
 - IMPLIES NO SECURITY, BUT MANY ASSUME DOES
 - STATIC PUBLIC SUFFIX LIST PERPETUATES HOSTS.TXT DILEMMA = ARCHITECTURALLY UNWISE
 - REQUESTING BADLY FORMATTED ENTRY CAN HARM COOKIE OR OTHER HANDLING
 - VOLUNTEERS HAVE NO CONTROL OVER DOWNSTREAM PROPAGATION OR INCLUSION

DEVS AND THE REAL WORLD PERSPECTIVE



DOMAIN NAMES ARE THE PARSLEY, NOT THE MEAL

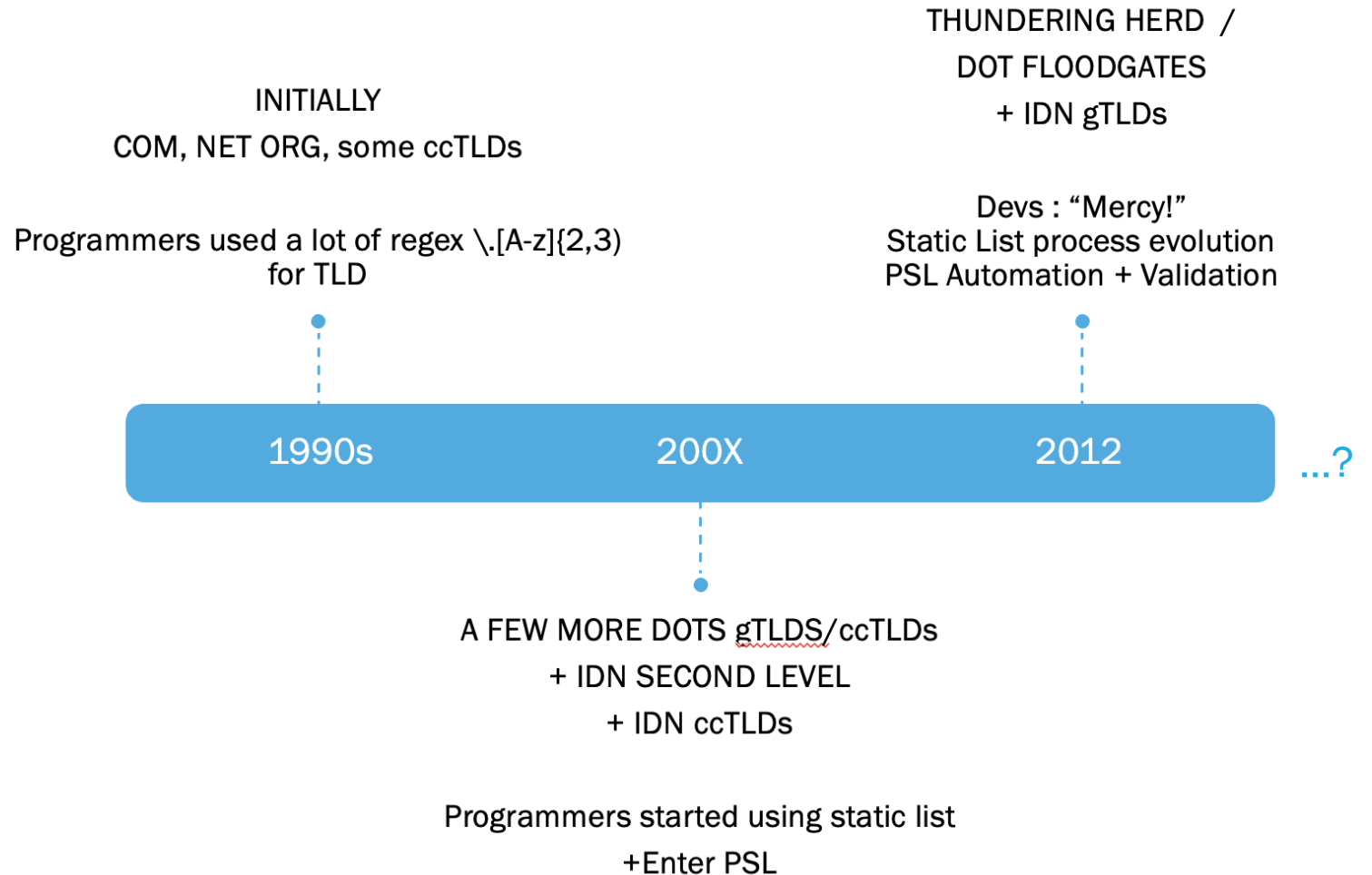
- DEVS PRIMARY CARE IS ABOUT ACHIEVING THEIR OBJECTIVE
- DOMAIN NAME IS TO THEIR PROJECT WHAT TELEPHONE IS TO BUSINESS
- FOR MOST DEVS - BUSINESS IS THE FOCUS, DOMAIN IS NOT



DOMAIN NAMES AND SOFTWARE INTERSECT CONSTANTLY

-
- “EVERYTHING” IS ONLINE NOW
 - REQUIRES DOMAIN NAME SOPHISTICATION
 - NEED MANNER TO MAKE MACHINES SMARTER ABOUT PROCESSING DOMAINS

THE VIEW OF TOP LEVEL DOMAINS TO THE REST OF THE WORLD BEYOND REGISTRATION AND RESOLUTION PROVIDERS



APPS / DEVELOPERS AND “ICANN”

- THERE IS NO PLACE FOR DEVELOPERS INSIDE THE ICANN MULTI-STAKEHOLDER MODEL
 - NON-COMMERCIAL, BUSINESS CONSTITUENCY NOT MADE FOR DEVELOPERS
 - IETF IS A STANDARDS BODY
 - AT-LARGE CLAIMS TO REPRESENT USERS, NOT REGISTRANTS
- IF THERE WERE A PLACE, THE COST OF PARTICIPATING vs VALUE IS NOT PRESENT
 - PACE IS SLOW BY THEIR STANDARDS
 - GOVERNANCE MEANS CREATING MORE FRICTION TO OBJECTIVES
 - TIME / MONEY SPENT ON POLICY STUFF BETTER SPENT ON MORE DEVS TO DELIVER

PROBLEM TO SOLVE : HOW TO MACHINE-PARSE DOMAIN TRANSITIONS (WITH SOME REASONABLE ELEGANCE)

- REGEX ? BAD: FALSE POSITIVES, TOO LOOSE, DOESN'T SOLVE 3LD
- STRLEN? BAD: CAUSES Y2K ISSUE WITHOUT Y2K IMPETUS - .INFO STILL AFFECTED FROM 20+ YRS ON THIS
- OK so is there a list of these?
 - WHO RUNS ALL THE DOMAINS? [Search Engine] -> find ICANN
 - DO THEY HAVE A LIST OF TLDs? [Hunt on ICANN site] -> IANA LIST
 - WHERE IS COM.AU or CO.UK etc? [Find PSL on GitHub] -> solved

THAT
“RAINBOW
BRIDGE”
THING





EXAMPLE: 2012 ROUND TLDS WERE INITIALLY UNRECOGNIZED

- PARTICULARLY IN WEBKIT BASED DEVICES WHERE DELAYED PROPOGATION OF STATIC LIST INCLUSION
- MANY RO EXECS COMPLAINED OF EMBARASSING PRESENTATIONS WHEN EARLY IN THEIR TLD'S DELEGATION
- PRESENCE OF TLD IN PSL COMPLETELY AFFECTED (FIXED) WHERE BEING SENT TO SEARCH INSTEAD OF DNS
- WORKED WITH ICANN TO GET THE CURRENT CONTRACTING JSON AND BUILD AUTOMATION
 - THIS FIXED ISSUE
 - [COST: SSAC REVIEW -> Result SAC 070]



THE WHOLE THING LEANS TOGETHER, INFORMALLY, BUT WIDELY

- OVER THE PAST 15+ YEARS OF PSL, THE ADOPTION, USE AND INCORPORATION OF IT HAS SPREAD WIDELY
- ENTRIES CAN HAVE WIDESPREAD AFFECTATION OF A DOMAIN OR EFFECTIVE TLD (GOOD OR BAD)

THAT
VOLUNTARY
THING



BROWSERS :

“WE USE BECAUSE : EXISTS, FREE, SIMPLE, CASUAL”

- BROWSER ADOPTION AND USE OF PSL IS THE MAJORITY OF MARKET
- EACH DOES THEIR OWN THING
 - HOW FREQUENTLY THEY REFRESH IF USING IN STATIC MANNER (ie IOS update, Chrome Version, etc)
 - WHAT DELTA (ADD/REMOVE) THEY PROCESS BEFORE USE (Maybe some proprietary mojo, smiting of badfolk, etc)
 - BEHAVIORS RELATED TO MATCHES MAY VARY (ie. Display, DOM, Cookie)
- PSL INCORPORATION IS A CHOICE – THERE IS NO COMPULSION TO DO ANYTHING
 - SAC 070 RECOMMENDATIONS ATTEMPTING TO COMPEL ANYTHING OF DEVS GOT A “GEE, THAT’S INTERESTING”
- BROWSERS MAY/WILL ABANDON PSL FOR THEIR OWN SOLUTION IF TOO MUCH CHANGES WRT STATUS QUO

OTHERS : “BECAUSE : EXISTS, FREE, SIMPLE, BROWSERS DO”

- OTHER USES
 - LET'S ENCRYPT AND OTHER CA – AVOID WILDCARD CERT FOR ETLD, PRESENCE ON PSL WORKS AROUND LIMITS PER CERT
 - CLOUDFLARE – RATE LIMITS ON SUBDOMAINS ALLOWED FOR GIVEN DOMAIN PER ACCOUNT
 - SECURITY SOLUTIONS – FOR USE IN DETERMINING HORIZONS ON SUBDOMAINS, ANTI-SPAM (DMARC)
- APPS / SOFTWARE LIBRARIES (MOST ALL MODERN LANGUAGES HAVE PSL LIB/HANDLERS)
 - PARSING FIELD INPUT
 - PROCESSING DOMAIN NAME LOGIC, GENERALLY
 - MEASURING VALID / INVALID
 - LINKIFICATION / DETECTION IN APPS
 - LOADS OF OTHER PURPOSES



CCTLD / GTLD REGISTRIES : HELP PSL VOLUNTEERS HELP YOU

- PERIODICALLY REVIEW YOUR ENTRIES
- WATCH FOR VERIFICATION REQUEST EMAILS TO IANA CONTACT
- THE CASCADING BENEFIT OF CORRECT LISTING IS POSITIVE FOR YOUR TLDs



DEVS : UNDERSTAND WHAT PSL IS (AND ISN'T)

- PSL CAN BE GOOD
 - TOOL FOR MACHINE UNDERSTANDING TLDs (OR “Effective TLDs”)
 - YOUR SOFTWARE / APP / SYSTEM CAN USE TO HAVE MORE ELEGANCE ON “TLDs”
- PSL IS NOT
 - INTENDED AS A SIEVE FOR LIMITS YOU BUILD IN TO YOUR SYSTEM(S)
 - A TRUST SYSTEM; THOUGH THERE IS SOME VERIFICATION AND VALIDATION, THE PSL IS NOT ANY INDICATION OF SECURITY OR TRUST IN THE CATALOGUED NAMES
 - INTENDED TO BE A WORKAROUND FOR LIMITS OTHERS BUILD INTO THEIR SYSTEMS
 - DESIGNED TO RECEIVE YOUR CUSTOMER SERVICE QUEUE WHEN [VENDOR] CHANGES THEIR PRIVACY PREFERENCES FOR THEIR DEVICES

Q & A





THANK YOU

Learn more:

<https://github.com/publicsuffix/list> or
<https://publicsuffix.org>

See Also:

ICANN OCTO 10 and ICANN SSAC – SAC 070

JOTHAN FRAKES, SSAC / Vice-Chair TechOps RrSG

jothan@jothan.com