PUBLIC SUFFIX LIST

A VOLUNTARY "RAINBOW BRIDGE" BETWEEN

DOMAINS AND APPS/DEVELOPERS

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Virtual Event

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 MPSL

- LEAST AWFUL, BEST MAINTAINED RESOURCE OF ITS KIND

- ENTIRELY VOLUNTEER CONTRIBUTOR/MAINTAINERS

- NO SERVICE LEVELS, WARANTEE 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 PARSELY, NOT THE MEAL

- DEVS PRIMARY CARE IS ABOUT ACHIEVING THEIR OBJECTIVE

- DOMAIN NAME IS TO THEIR PROJECT WHAT TELEPHONE IS TO BUSINESS

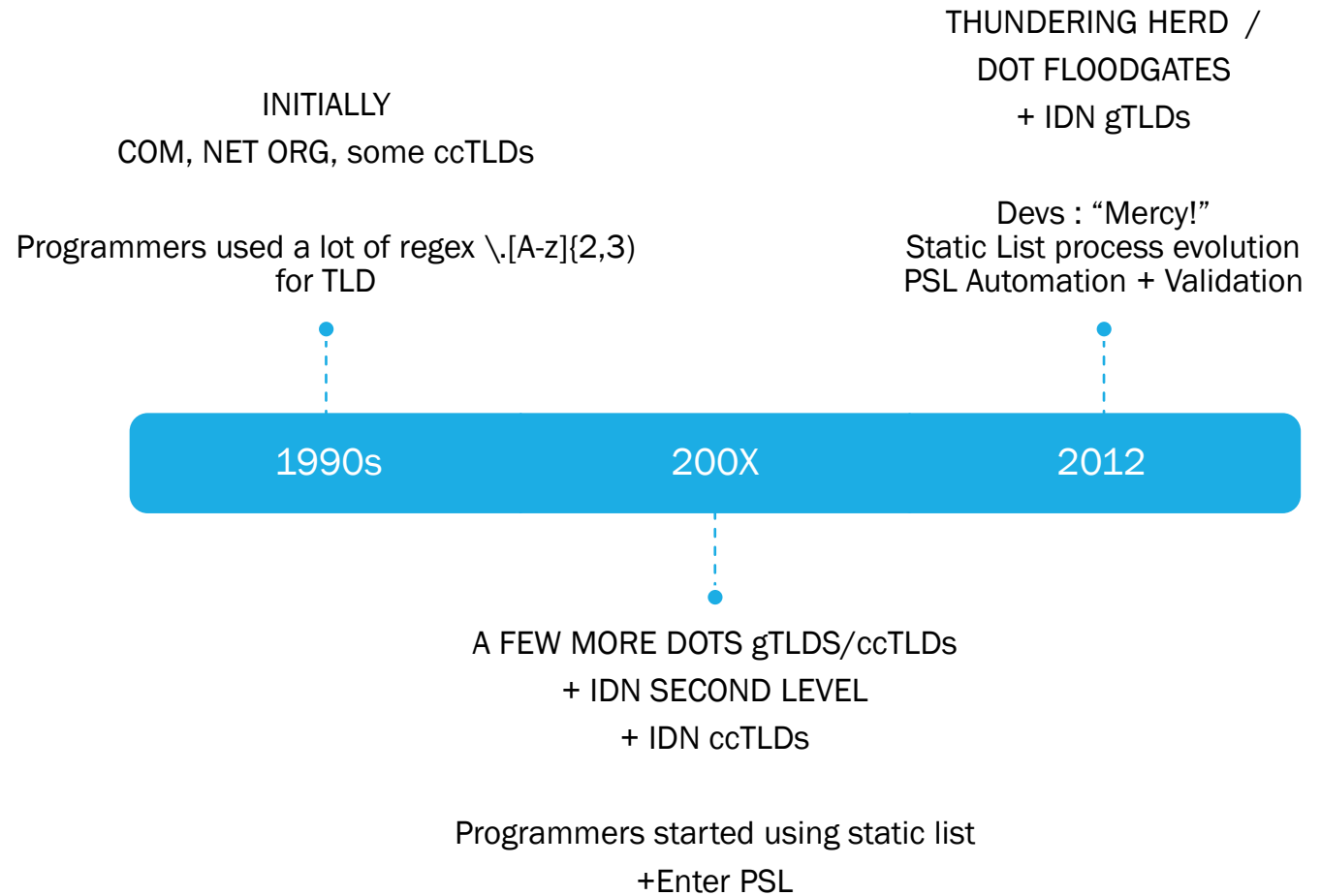- FOR MOST DEVS - BUSINESS IS THE FOCUS, DOMAIN IS NOT

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

INITIALLY
COM, NET ORG, some ccTLDs

Programmers used a lot of regex \.[A-z]{2,3}
for TLD

THUNDERING HERD /
DOT FLOODGATES
+ IDN gTLDs

Devs : "Mercy!"
Static List process evolution
PSL Automation + Validation

| 1990s | 200X | 2012 |

A FEW MORE DOTS gTLDS/ccTLDs
+ IDN SECOND LEVEL
+ IDN ccTLDs

Programmers started using static list
+Enter PSL

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 INITALLY 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 <u>NO COMPULSION TO DO ANYTHING</u>

  - 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, <u>BROWSERS DO</u>"

- 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
    - FACEBOOK PIXEL - # OF SUBDOMAINS PER VERIFIED DOMAIN (MORE ON THIS LATER)
    - 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

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

Also:
ICANN OCTO 10 and ICANN SSAC – SAC 070

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