

Arabic Script Variant Issues for TLDs

Arabic Case Study Team



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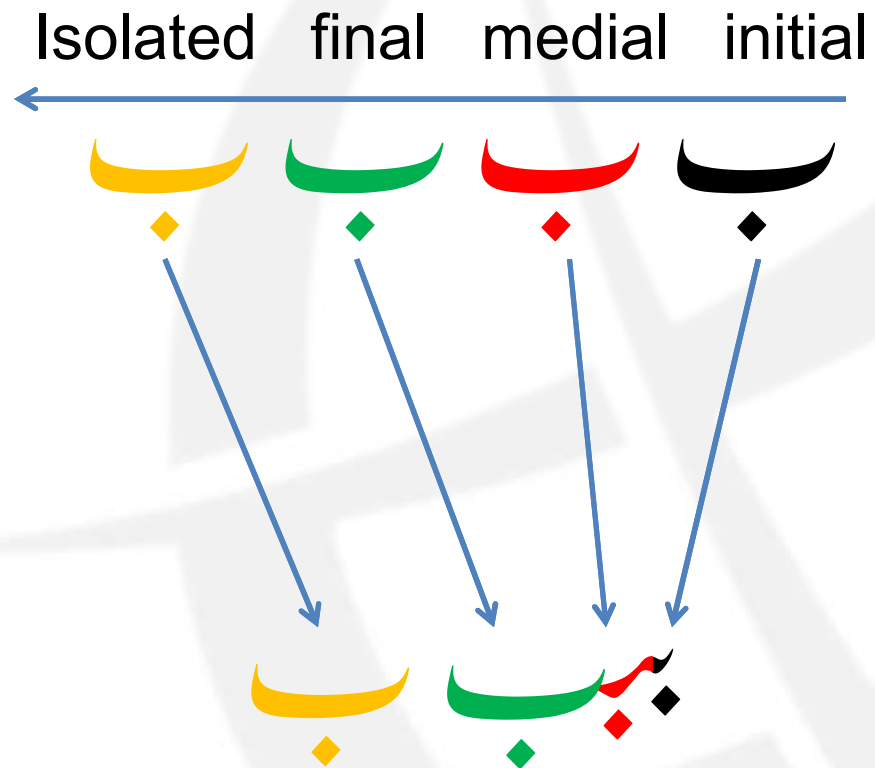
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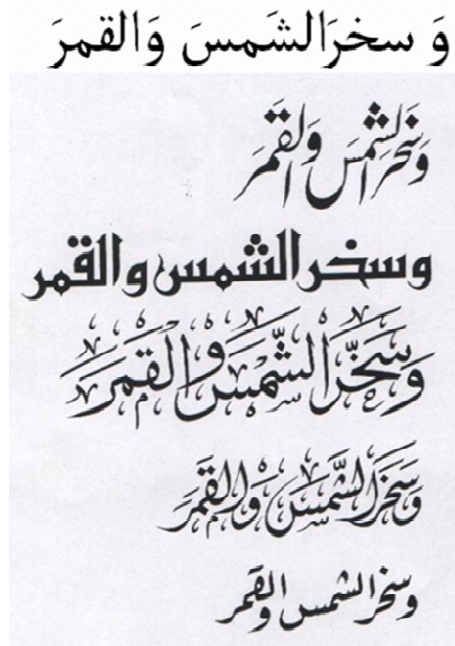
Taxonomy



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Character Set



- Not all PVALID characters should be allowed for TLDs
 - Combining Marks
 - Archaic Characters
 - Quranic Marks
 - Digits
 - Others (misc.)



Multi-"word" Expressions

- Cursive script, more complex
- No concept of abbreviation
- Space not allowed
- No capitalization
- Solution
 - ZWNJ (for some other languages)
 - Hyphen (for Arabic language)
- Neither allowed for TLDs



Variants in Arabic Script

كه ≠ كه

ن ≠ ن

كا = كا

تا = تا

آ = آ

له = له

- Identical Cases
- Similar Cases
- Interchangeable Cases
- Optional Cases



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Label Generation Policy

Two ways for writing a letter, each with or without a combining mark

- More than a “language” “table”
- Characters + variants + additional constrains + meta information + ...
- Need an automatic variant generation and verification process
- a string of 5 letters can have 4^5 variants
- Should variant be at character or position level?



Variant label Status Management

- Multiple States
 - Allocated, Reserved, Blocked, Activated, Delegated, Fundamental
- Process and constraints for changing between states?
- Impact of TLD re-delegation
- Impact of change in label generation policy



WHOIS Lookup

$$\left\{ \begin{array}{c} \text{Label } 3_1 \\ \dots \\ \text{Label } 3_l \end{array} \right\} \cdot \left\{ \begin{array}{c} \text{Label } 2_1 \\ \dots \\ \text{Label } 2_m \end{array} \right\} \cdot \left\{ \begin{array}{c} \text{Label } 1_1 \\ \dots \\ \text{Label } 1_n \end{array} \right\}$$

- How will variant Domain Name Registration Data (DNRD) be looked up?
- Additional Services? Variant look up to point to Fundamental? Status information?



Fees

- Recommend no extra fees
 - Variants caused not due to applicants choice but through inherent ambiguity in
 - Script
 - Encoding
 - Increasing fees will discourage variants, affecting user access and perceived internet stability



End User Requirements/Issues

- Character support (OS, font, applications)
- Font style and size variation
- Keyboard variation
- Lack of management tools for U-label display
- Bi-directionality



Arabic Case Study Team

Local Host Organization

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Thank You



Questions

One World

One Internet



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