

Domain Name Basics

Universal Acceptance

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Universal Acceptance (UA)

Domain names and **email addresses** must be **usable** in any applications **regardless** of the written script, length or newness of the TLD:

- example.photography
- тест@пример.рф
- 例. 佛山
- contact@nic.vermögensberater



Historic wrong Assumptions

Back in the days, everything was based on ISO 3166 two-letter codes and a few gTLDs, resulting in the following:

- 3 letters or shorter
- plain ASCII
- no significant changes to DNS root

These **assumptions** resulted in **hardcoded** validation rules by software developers and problems for users.



No one cares ...

In **2001**, the **new TLDs** .info and museum broke the assumption about the length.

In **2003**, **International Domain Names** became available, such as español.com and müller.de, and broke the ASCII assumption.

In **2010**, the first **non-ASCII** Top-Level Domains went live.

- Russia рф
- Egypt صر
- Saudi Arabia السعودية
- United Arab Emirates امارات

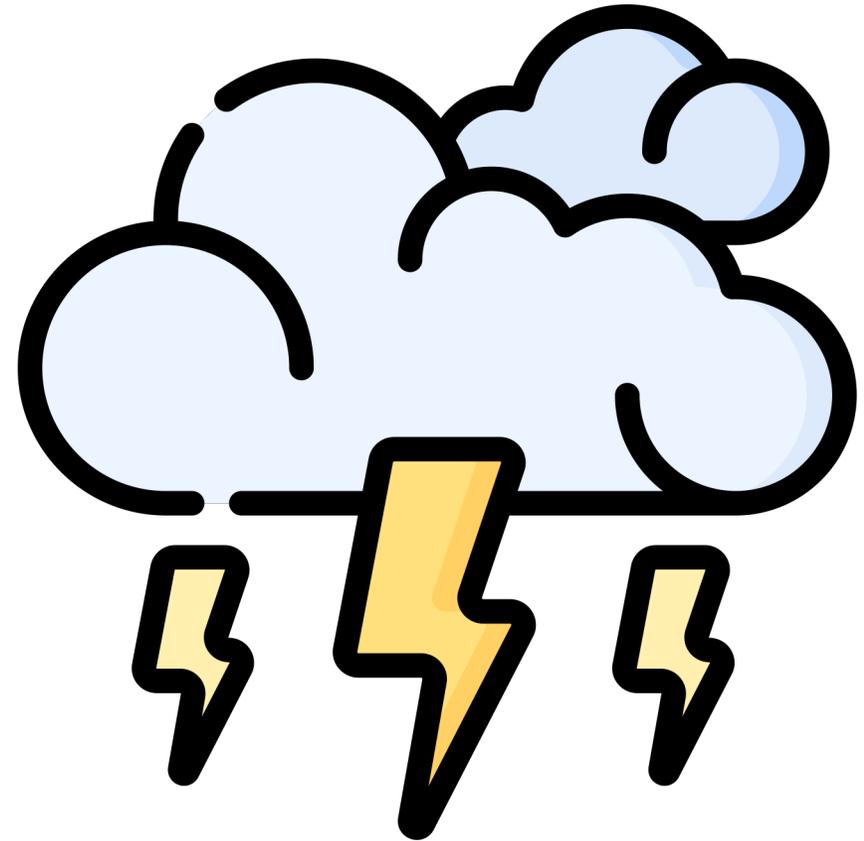


And it got more complicated

In **2013**, ICANN delegated the first **new gTLDs**, and more than **1,900** were proposed.

- More long ASCII names, such as .photography and .barcelona
- More IDN (non-ASCII) names, such as .vermögensberater
- Many TLDs were delegated every week

Browser, email, and other application vendors couldn't keep up with these changes.



General Slackness

Since 2001 a **lot of changes** have happened. Most of them **weren't transparent** and **weren't widely public communicated**, but many of these changes hadn't any impact on the public.

Some Developers and Managers **didn't care**. They were searching for code snippets and were using them, regardless if they fully fix the issue, e.g., search results on 'validate email address code':

- +10M Google Search Results
- +500 GitHub Repositories
- +100 CPAN Modules

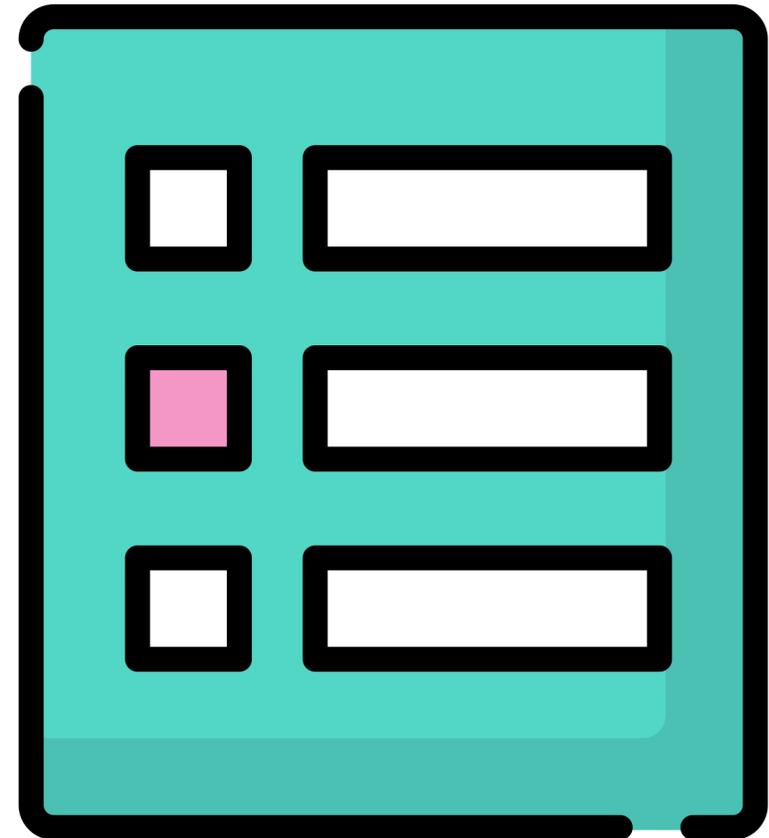


Public Suffix List

The Public Suffix List (PSL) is a **catalog** of public **TLDs** and private **domains** maintained by Mozilla.

It **helps** to **find** the **highest level** at which a domain may be registered for a particular TLD and is used in many 3rd Party Libraries to support Software Developers.

You may find more details and toolkits on <https://publicsuffix.org>.



Universal Acceptance Steering Group

The Universal Acceptance Steering Group (UASG) was founded in February 2015 and tasked with undertaking activities that will effectively **promote** the **Universal Acceptance** of all valid domain names and email addresses.

The group is made up of representatives from more than 120 companies, governments, and community groups.

You may find more details and toolkits on <https://uasg.tech>.



Other initiatives

Mainly because of the new gTLD program, a lot of awareness was created, and some initiatives arose from that.

- **ICANN** <https://icann.org/universalacceptance>
- **Universal Acceptance Toolkit** (C, C#, Java, Perl, Python) <https://github.com/icann>
- **Universal Acceptance Repository** <http://ua.thedna.org>
- **Google's Domain Test service**
<https://github.com/google/domaintest>



What could we do?

If you run an **online business**, **ask** your **IT** if your customers can use any email address to sign up or to update their data.

If you are an **IT manager**, **don't ignore** it because most people have .com email addresses. Way too many people don't. Let your developers check and adopt it.

If you are a **Software Developer**, quickly **check** how your **code** is **validating** email addresses (keyword 'newness of TLDs') and how your database is storing them (keyword 'length'). There is a lot of help out there.



Thank you!