

IANA's role in managing the DNS

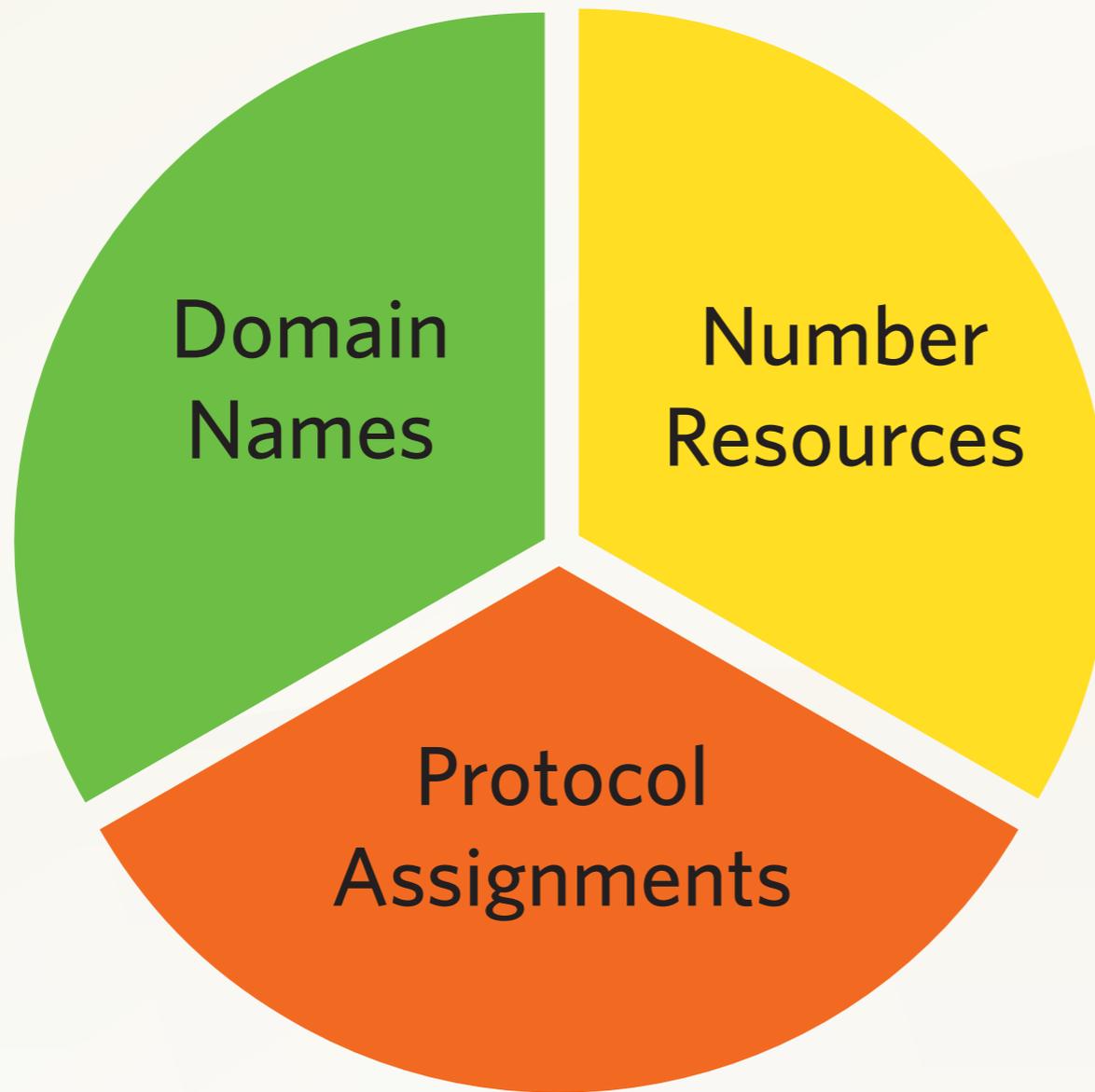
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What is IANA?

- ▶ the “Internet Assigned Numbers Authority”
- ▶ Quite likely the oldest Internet institution
 - ▶ first documented in 1972
- ▶ Responsible for global coordination of the Internet’s unique names and numbers
- ▶ Since 1998, a service provided by ICANN
 - ▶ Previously operated in academia under US Government research contracts.
 - ▶ Internally within ICANN, a department

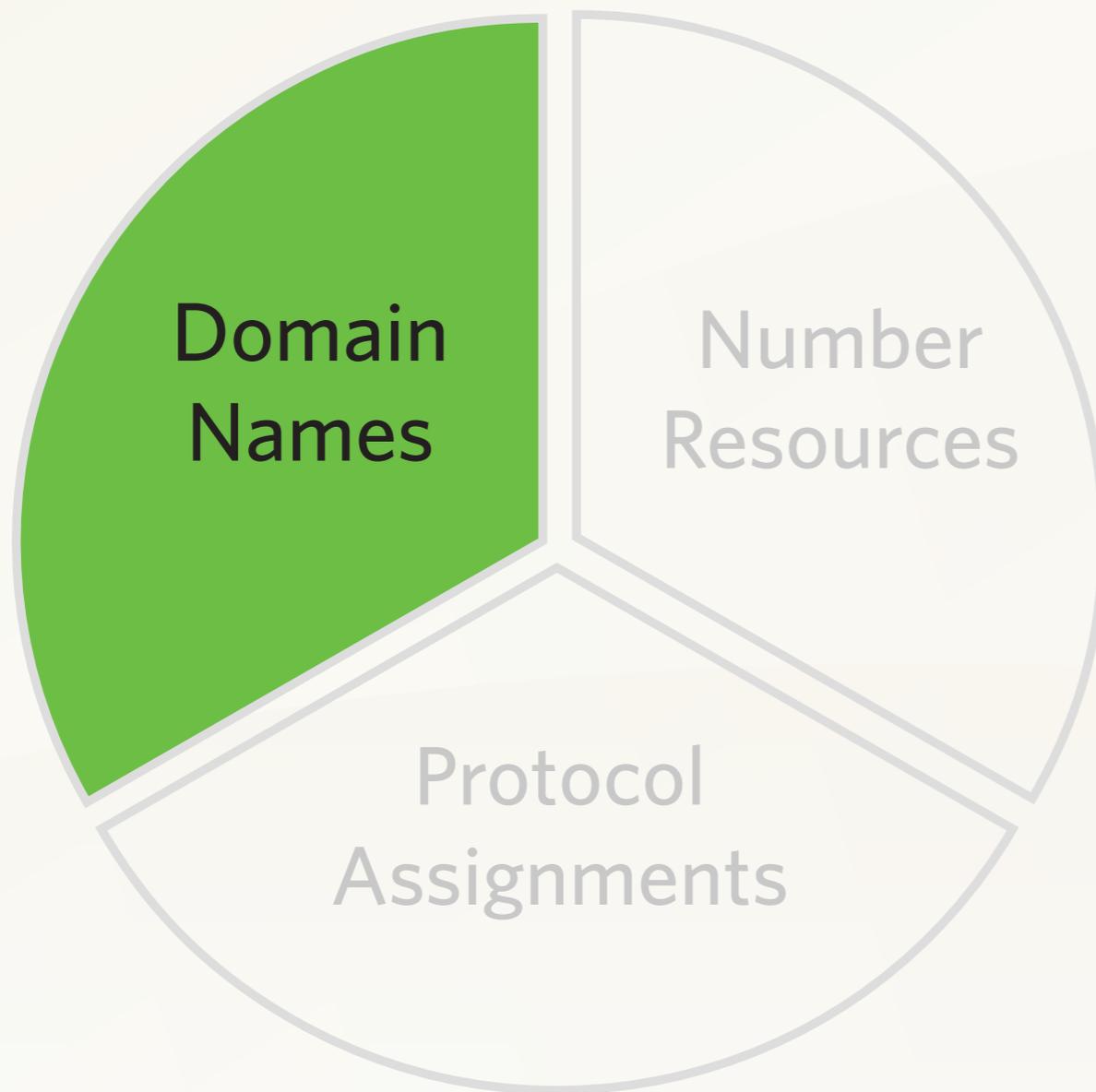


- IPv4 Addresses
- IPv6 Addresses
- AS Numbers

- Hundreds of other protocol systems that are non-hierarchical
- In liaison with IETF, IAB etc.

IANA's key roles

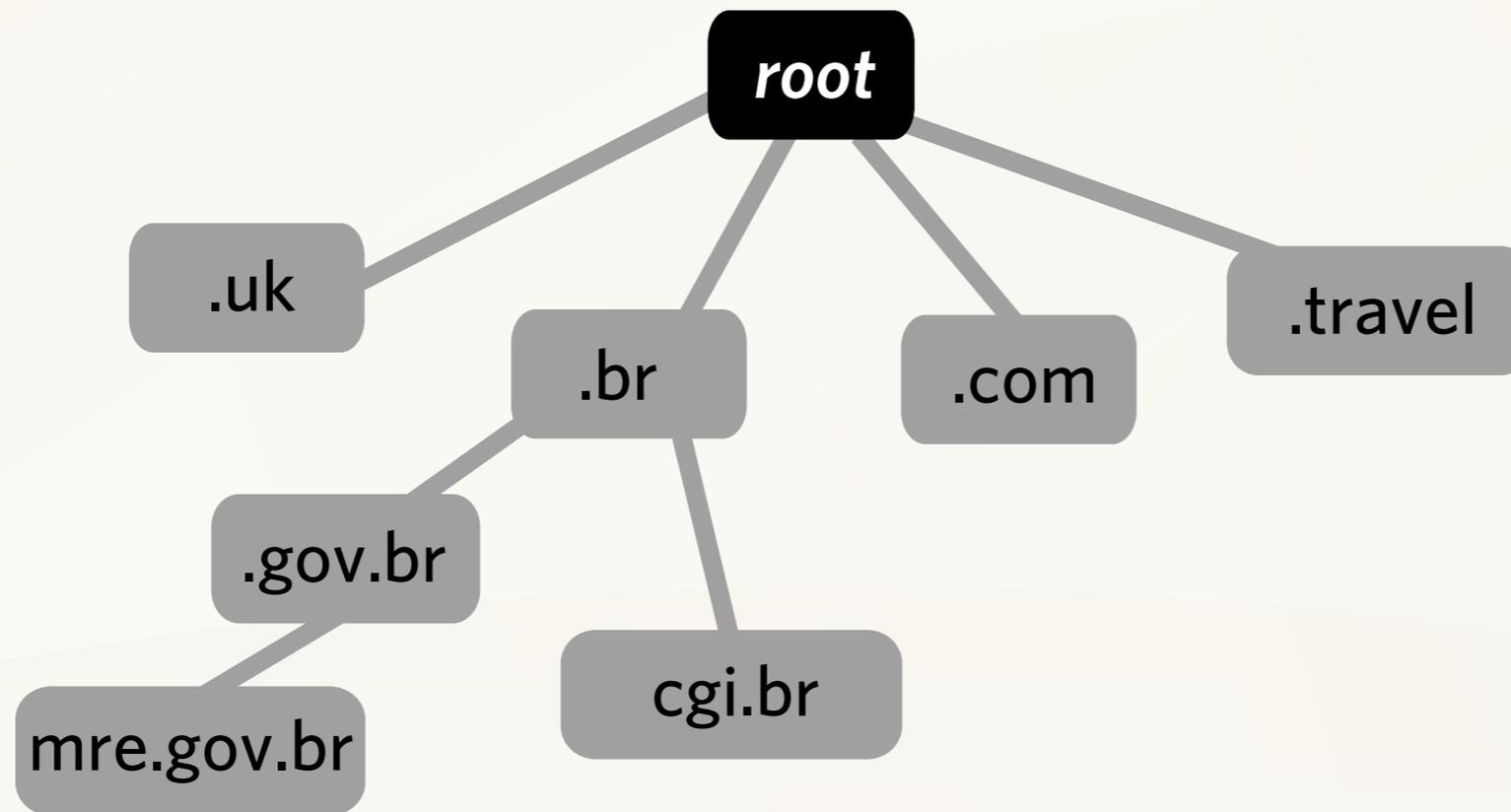
- ▶ Coordinating Internet identifiers that need to be globally unique



- **.INT**
*Intergovernmental
Treaty Organisations*
- **.ARPA**
*Key internal
technical systems*
- **DNS root zone**

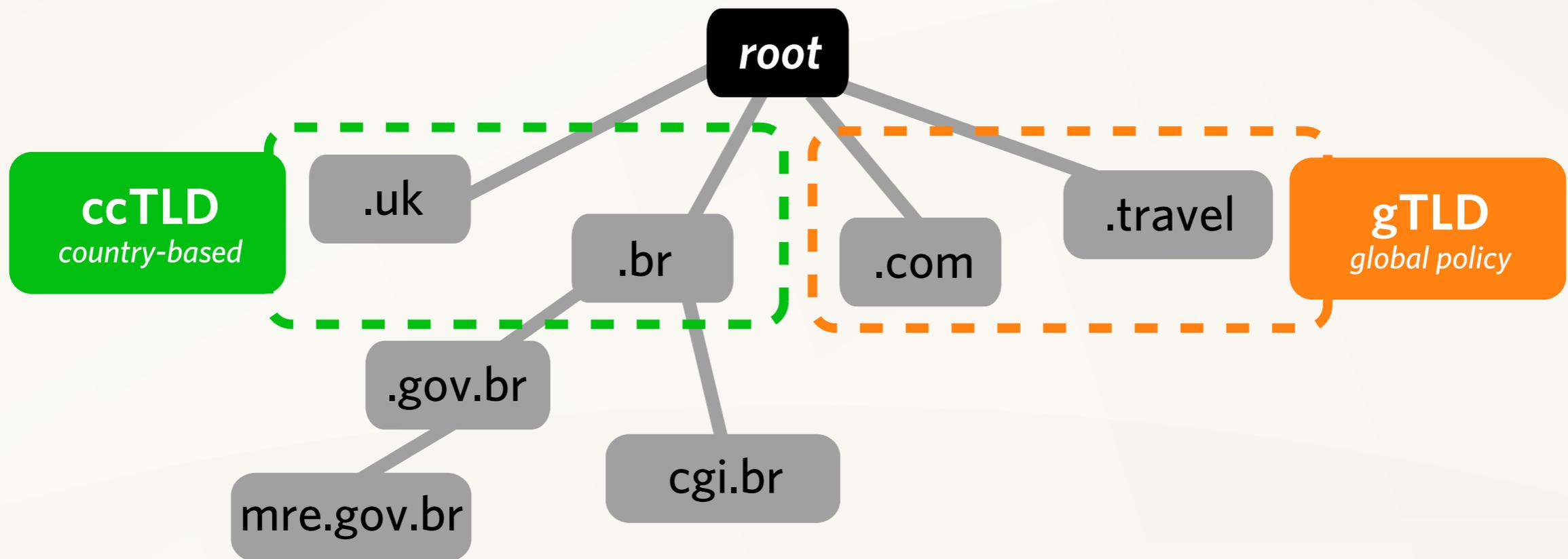
IANA's key roles

- ▶ Domain name administration is a small, but important and highly visible, component.



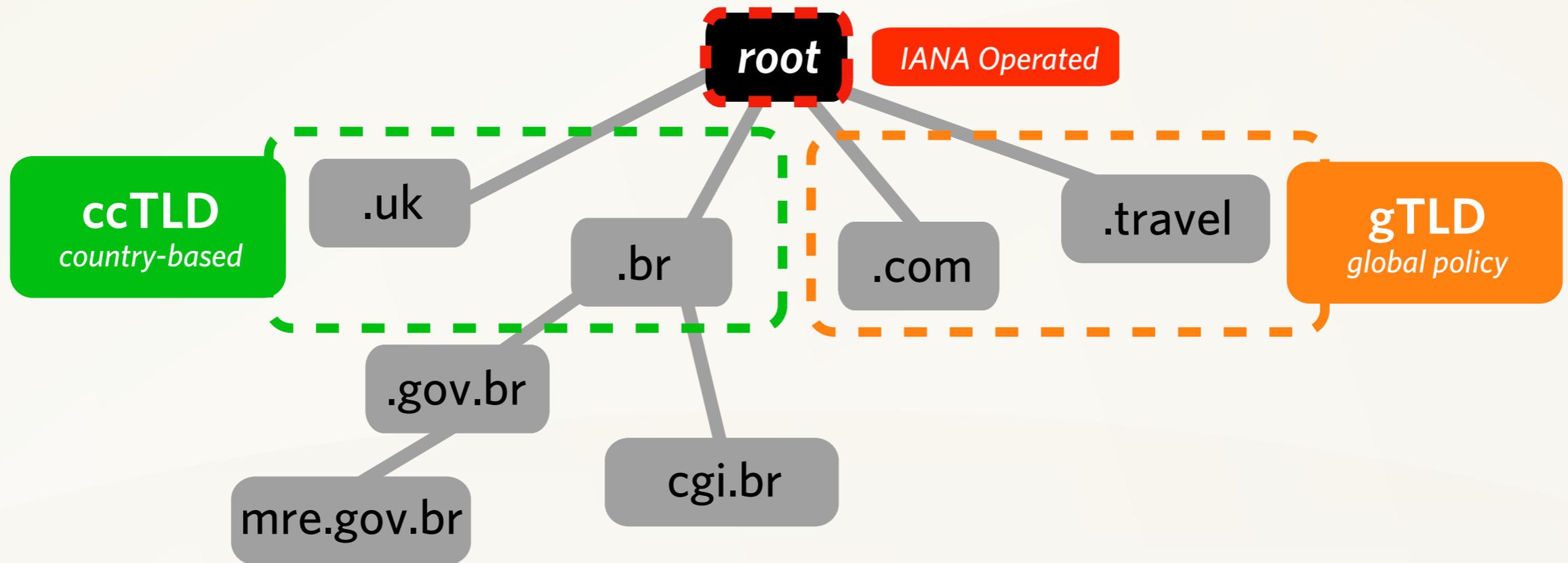
DNS structure

- ▶ Delegations are made down a “tree”.
- ▶ *root* → *.br* → *.gov.br* → *mre.gov.br*



DNS structure

- ▶ “top-level domains” can be divided into:
 - ▶ country-codes: local policy, local law, subsidiarity
 - ▶ global: worldwide use, ICANN policy



DNS structure

- ▶ IANA operates the root
 - ▶ delegates operators of TLDs (incl. ccTLDs)

Country-code top-level domains (ccTLDs)

- ▶ ISO 3166-1 standard nominates two-letter codes for countries and autonomous regions (as defined by UN)
- ▶ IANA will assign the operator of a ccTLD at the request of the local Internet community in a particular country.
 - ▶ initial request is a “delegation”, changing operators of an existing code is a “redelegation”.
- ▶ IANA doesn't take an ongoing role in operating the domain, simply appoints the operator. Local interests should decide how the domain is run within country.

Key criteria for ccTLD operator

1. Operator must show operational and technical skills

Must be able to operate the TLD in an effective and proper manner. Meet certain testable technical criteria.

2. Operator must be in country

Allows the operation to be subject to local law.

3. Operator must treat LIC fairly and equitably

The operator, for example, can't discriminate within the local Internet community on who it may provide service for.

4. Operator must demonstrate community/government support.

Operator needs to show that it has reasonable support to operate the resource.

Ability to meet these criteria is formally assessed in the event of a delegation or redelegation request.

Delegation Procedure

- ▶ IANA performs evaluation in consultation with:
 - ▶ requestor to understand situation, seek additional documentation
 - ▶ current operators (if they exist) to determine consent
 - ▶ local Internet actors to confirm assertions on LIC support
 - ▶ governments to identify support
 - ▶ ICANN staff who have insight into local situation
- ▶ If assessed to proceed, considered by ICANN board
 - ▶ Multi-stakeholder board from many nations
 - ▶ Focus is on answering two questions:
 1. Does the request reflect the in-country consensus?
 2. Does the application preserve the stability of the Internet?
- ▶ Upon approval, implemented normally

What ccTLD operators do

- ▶ Operate the ccTLD with policy that is in the public interest of the territory concerned
- ▶ Operate a technically stable service
 - ▶ poor setup = unreliable domain service = “broken” Internet
 - ▶ damage of bad setup affects outside country as well!
- ▶ Coordinate with IANA
 - ▶ ensure effective communication of data
- ▶ Participate in ICANN, other fora, to develop global policy and share best practice

Management tasks for IANA

- ▶ Essentially a technical maintenance function
 - ▶ Technical delegation details to be kept in the DNS root zone
 - ▶ Monitoring and coordination of effective function of DNS
 - ▶ Consultation and research on technical function
 - ▶ Provides neutral service to all TLD managers, independent of their direct involvement in ICANN
- ▶ Elements touch on non-technical concerns
 - ▶ Non-technical decisions are not taken by IANA!

Future work for IANA

- ▶ Internationalisation of the DNS root zone

إختبار
Arabic

آزمایشی
Persian

测试 測試
Chinese

.испытание
Russian

.परीक्षा
Hindi

.δοκιμή
Greek

.테스트
Korean

טעסט
Yiddish

.テスト
Japanese

.பரிட்சை
Tamil

- ▶ Improved efficiencies in processing requests



Summary

- ▶ ccTLDs are operated in the public interest, within countries, involving local Internet community and local government.
- ▶ IANA's role is ensuring it is operated by a responsible operator that the community agrees is appropriate.
- ▶ ccTLD operators and IANA community coordinate to ensure technical data is properly in sync.
- ▶ With respect to the root zone, IANA operates an essential technical service

Thank you for your attention!

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