ccTLD Best Practices & Considerations
ccTLD workshop, Guyana 2007

John Crain and Jacob Malthouse
Internet Corporation for Assigned Names and Numbers

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ccTLD as a public trust

▸ ccTLDs are designated to operators who will operate them in the best interests of the local communities they serve.

▸ Operators should strive to tailor operations to best serve the users:

  ▸ Ensure minimum technical standards are met

  ▸ Strive for best practice

  ▸ Operate with policy that suits local requirements

Things we'll consider

▸ How a ccTLD operator can be structured

▸ Best Current Practices

▸ Interacting with ICANN

ccTLD Structures

Some options

- Government?
- Not for profit?
- Outsource?

- Most common:
  - Not for profit private organisation
  - Appropriate membership from the community
  - Chartered for limited scope
  - Some kind of liaison with the government
  - Often light regulatory oversight

Sales model

- ▸ Direct registration

  - ▸ No middle man - easier to control most aspects of registration

- ▸ Registry-registrar model

  - ▸ Requires an interface between registry and registrar

  - ▸ Offloads end-user interface from registry

- ▸ Both

Scope

▸ Local or Global sales?

▸ Decide what best serves local community

▸ For global, consider legal aspects

Best Practices

Preface

- These are some highlighted points from a few key documents on best practice

- It is not exhaustive

- There is a wealth of information on ccTLD Operations out there

  - Check meeting proceedings; regional organisation websites

RFC 2870 - Root Server Name Operational Requirements

▸ Document designed for Root Servers

▸ Still some valuable advice for TLD operators

  ▸ root servers and TLD servers aren't that different!

Server Considerations

▸ Must run servers that supports technical standards

▸ Must handle load 3x the measured peak

▸ Diverse bandwidth to support above

▸ Must answer authoritatively, and NOT be recursive

▸ Should "NOT" block access from a valid Internet host

▸ Should "NOT" support AXFR (zone transfer)

Security Considerations

▸ Physical security
  ▸ Limited to a specific set of individuals
▸ Power continuity for 48 hours
▸ Fire detection and retardation
▸ Backups
▸ Don't provide other services on the servers (mail, ftp, web etc.)
▸ Keep on a separate network segment from public hosts
▸ Log attempts at intrusion
▸ Set your reverse DNS

Communications

▸ Coordinate downtime between nameserver operators

▸ Coordinate backups between servers; keep backups off site

▸ Exchange logs and statistics between nameserver operators

▸ Nameserver operator personnel should be on call 24x7

RFC 2182 - Selection and Operation of Secondary DNS Servers

‣ Don't place all on the same LAN/building/segment

‣ Host offline doesn't mean DNS doesn't matter!

‣ How many? 4 or 5 is probably good rule for TLDs, varies depending on circumstances

  ‣ Note: There is roughly a hard limit of 13 (related to 512 bytes), and of course there should be more than 1!

ccTLD Best Current Practice Draft

▸ A document in progress for a number of years

▸ Tries to describe some of the common practices of ccTLDs

Human Resources

▸ Administrative Point of Contact

  ▸ Responsible for making clear rules for domain policy and operation.

  ▸ Should represent the local Internet community and ensure ccTLD run for benefit of country and its citizens.

▸ Technical Point of Contact

  ▸ Maintains the zone and makes sure systems run

▸ Programmers and Technical Staff

  ▸ DNS experts, UNIX administrators should be in the team

▸ Finance and Billing

  ▸ If you are charge fees...

▸ Lawyers

  ▸ A reality if you trade globally

Structuring the TLD

▸ Flat or hierarchical?

  ▸ Flat - simpler, equal access

  ▸ Hierarchical - more domains, less disputes

  ▸ Difficult to change later

▸ Two (.co.xy) or Three (.com.xy) TLDs?

  ▸ Matter of preference, really

▸ Distributed distribution?

  ▸ Delegating sub domains to other parties

  ▸ More complicated administration for small registries

Technical Requirements for Registry

- ‣ Secondary Servers

- ‣ Networks (redundant)

- ‣ Physical and Electronic Security

- ‣ Quality of Service (24/ 7 availability!)

- ‣ DNS software (BIND, NSD, etc.)

- ‣ Registry software

- ‣ Diagnostic tools (ping, traceroute, zonecheck, dig)

- ‣ Registry Registrar Protocol

Other considerations

▸ Dispute Resolution

  ▸ Local law prevails

  ▸ Alternate Dispute Resolution (ADR) designed to be more lightweight

    ▸ UDRP is often used as a model

    ▸ http://www.icann.org/udrp/udrp.htm

Other considerations

▸ Regional organisations

  ▸ APTLD (www.aptld.org) - Your local group

  ▸ CENTR (www.centr.org)

  ▸ LACTLD (www.lactld.org)

  ▸ AfTLD (www.aftld.org)

▸ Country Code Network Operators Group

  ▸ www.ccnog.org

Interacting with ICANN

ICANN

▸ Interesting ICANN parts for ccTLDs:

  ▸ ccNSO

  ▸ Accountability Frameworks

  ▸ ICANN Meetings

  ▸ Liaisons

ccNSO

▸ Country Code Name Supporting Organisation

▸ The mechanism for ccTLDs to participate in ICANN's policy processes

  ▸ Reviews on documents that govern ccTLDs will occur here

▸ Any ccTLD can join. No cost involved.

▸ http://ccnso.icann.org/

Accountability Frameworks

▸ Simple lightweight agreement on the services each will provide

- ▸ Reflects the key elements of mutual concern identified by the ccNSO
- ▸ Mutual recognition and commitments by both parties
- ▸ Covers dispute resolution and termination
- ▸ Termination clause

▸ Does not affect rights, or the service ICANN will provide

▸ Can be tailored to local requirements or circumstances

Why sign?

▸ Formalises relationship between ICANN and ccNSO

▸ Provides clarity on what to expect

▸ Shows commitment to a community-based coordination of the global interoperable Internet

If you are interested…

‣ ICANN staff responsible for these can speak to you about what it involves and what your needs are.

‣ We can link you with the appropriate people.

ICANN Meetings

▸ The main policy forums for DNS governance

▸ Held 3 times a year, rotating between 5 regions

▸ Free to come to and participate in

▸ Often has side meetings (i.e. regional meetings)

▸ Next meetings: March 26-30 - Lisbon, Portugal

  ▸ July 25-29 - San Juan, Puerto Rico

Liaisons

- IANA Liaison

  - Kim Davies <kim.davies@icann.org>

- Regional Liaison

  - Jacob Malthouse <jacob.malthouse@icann.org>

  - Update us with what you're doing. Keep your IANA details up to date!

More information

Sources for information

▸ RFC 1591 - ccTLD governance

  ▸ http://www.rfc-editor.org/rfc/rfc1591.txt

▸ RFC 2870 - Root Server BCP

  ▸ http://www.rfc-editor.org/rfc/rfc2870.txt

▸ Accountability Frameworks

  ▸ http://ccnso.icann.org/announcements/announcement-06ja

▸ ccTLD Best Current Practice Draft

  ▸ http://ws.edu.isoc.org/workshops/2006/PacNOG2/track1/da

  ▸ Currently a draft under development, comments welcome to the authors.

Thankyou for your attention!

John Crain
john.crain@icann.org

Jacob Malthouse
jacob.malthouse@icann.org