PAWS Database Discovery

Some considerations since the last Berlin meeting

IETF 88, Vancouver, Canada

Issues from IETF 87 /Resolution (1)

1. **"DS server doesn't know the pre-configuration"**
   When addresses of DBs are pre-configured in master, the master needs to know which regulatory domain it's in before it can choose the proper DB. Example: if there are 100 DBs pre-configured, and the master doesn't know which domain it's in, then master may try to connect to each DB before it gets the correct one.

2. **"R2: should maintain information for not only one regulatory body"**
   Comment that the "should" here might be not appropriate, because it's reasonable for WSDB DS to cover only one regulatory domain. Revised – see slide 8.

3. **whole point of a discovery service is to find the server or servers for a number of countries/regulatory domains,**
   The discovery service here informs based on location and provides a list of databases that are available.
    If there is only one, no discovery is needed.

Issues from IETF 87 /Resolution (2)

4. "Ofcom model for getting the databases, requirement is that they have to be able to de-accredit a database."
   when there is an entity like an Ofcom Listing Server, the WSDB DS will only return the address of the entity (Listing Server). The master then connects to the Listing Server to get the addresses of DS.
   If there is no such entity (Listing Server), then WSDB DS should update its list to remove records corresponding to de-accredited databases.

5. "DS server doesn't know the pre-configuration"
   There is no need for WSDB DS to know the pre-configuration in master. The discovery procedure is used by master to get its current regulatory domain and available DBs in that domain. If there are pre-configured DBs, it is ok for master to connect to this pre-configured DBs according to its current regulatory domain.

6. "who sets up the WSDB DS"
   Recommend that vendor or regulatory body can do this.

Scenarios that need DB discovery

- Find the server or servers for a number of countries/regulatory domains.
  - if there is only one regulatory domain, there's no need for discovery.
  - if master runs in only one regulatory domain, it will functions like Listing Server (Ofcom).
- For pre-configured DBs, Master needs to know its current regulatory domain before choosing the right DB.
  - the master could be pre-configured with DBs for different domains.
- When master runs in a different domain, it needs an authenticated entity providing the DB discovery service.
  - The WSDB DS could acts as the entity here.

What can be gotten from discovery?

- ## URLs of DBs in certain regulatory domain
  - This requires owner of WSDB DS to know DBs in the domain.

- ## Address of the entity that maintains the DBs.
  - if the DBs in the domain are maintained by certain entity(e.g. Listing Server from Ofcom), the address can be returned instead of URL of DBs.

- ## DB related information (may be Optional)
  - Such as the owner info of DB, information to differentiate between DB and entity that maintains DBs, ….
  - The information could be used by master to select the suitable DB to connect to.

- ## Regulatory domain information
  - master needs have the knowledge of where it is.

DB Discovery Introduction

master

needs db discovery

WSDB DS

1. DISCOVERY_REQ (geo-location)

2. DISCOVERY_RESP (URLs, domain)
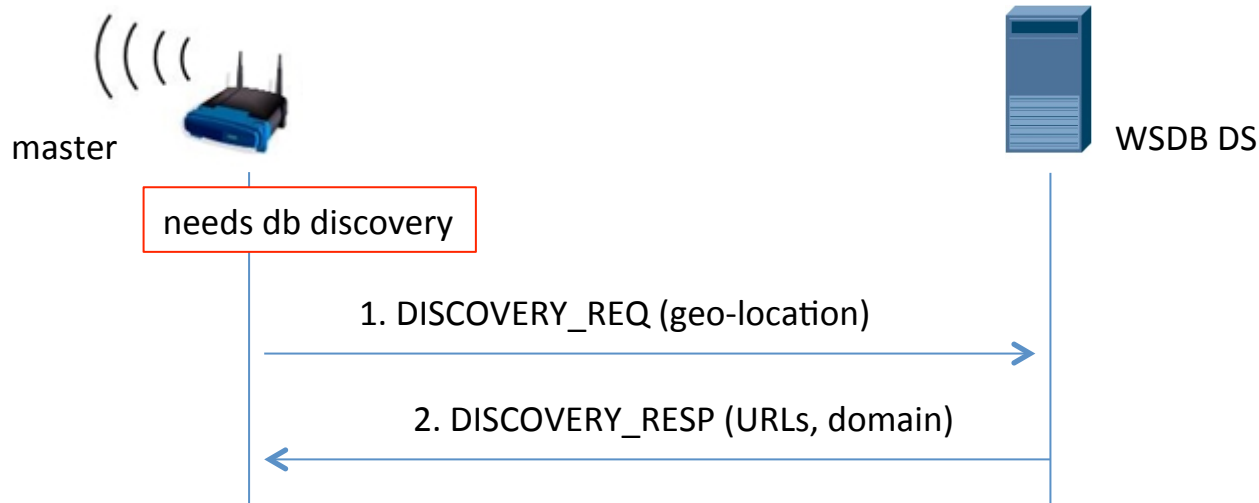
WSDB DS: WSDB Discovery Server, maintains the white space DBs or other entity (e.g. Listing Server) which maintains DBs for certain region areas.

❖ LoST protocol used is a hierarchical while WSDB DS is more like a distributed and flat architecture. So, the iterative and recursive methods in LoST might not be needed.
❖ Currently, in response message, the LoST server only returns URL(s) of server(DB). For PAWS the regulatory body and some other information such as the owner of DB may need to be returned.
❖ The LoST message is XML based. In the PAWS protocol JSON is used to encode the message, so there will be some work to do.

Who sets up WSDB DS?

- The basis is that the operator of WSDB DS has relationship with Master. The following are possible considerations:

- Vendor

  - It is easy for vendor to reconfigure the address of WSDB DS in the master device.

  - the vendor should have relationship with regulatory body where master works.

- regulator

  - - The master may only need to know its "home" regulator's WSDB DS, and then there should be relationship between regulators.

Requirements for WSDB DS

R1: it should have agreement with regulatory bodies.

~~R2: it should maintain information for not only one regulatory body.~~

R2: it could maintain information for one or more regulatory body.

Thanks!