

PAWS Database Discovery

(draft-wei-paws-database-discovery-01)

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Motivations

- Several possible solutions for master's finding of available white space database may be used, such as :
 - pre-configured manually by owner of WSD.
 - configured by WSD manufacture.
 - retrieved from a Listing server of a regulatory domain.
 - database redirects master to another database that can serve the master, and the database is in charge of telling master about its current regulatory domain.
- For the above solutions, some circumstances exist where they may not fit very well:
 - master may not be able to know in which regulatory domain it's in, and
 - when master is used in a country which is not its original one, it may not know the databases that serve its location.
 - it doesn't seem right for a database that is not certified in a particular regulatory domain to tell you that you are in that domain, or help you discover a listing server or other database that happens to be there.

DB discovery mechanisms

WSDB DS, WSDB Discovery Server, maintains all the white space dbs for certain region area.



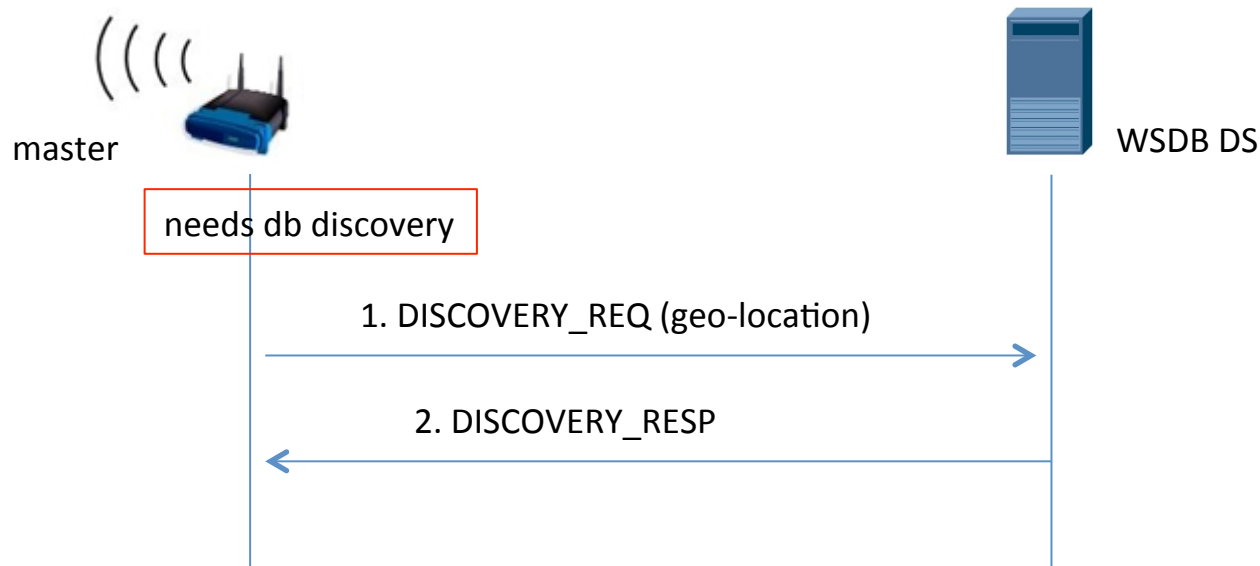
- In the mechanism, an entity named WSDB DS is introduced. It takes master's geo-location as input and can provide regulatory domain information and/or available database(s) for master or listing server in that regulatory domain.
- The WSDB DSs can be deployed independently without knowledge of each other. As shown above, a lot of WSDB DS can be deployed all around the world.
- The master should be preconfigured with a WSDB DS that can provide service for it, every time master starts discovery procedure, it connects to this WSDB DS.

DB discovery mechanisms

- Requirements for WSDB DS
 - R1: it should have agreement with regulatory bodies.
 - R2: it should maintain information for not only one regulatory body.

DB discovery mechanisms

- Discovery procedure



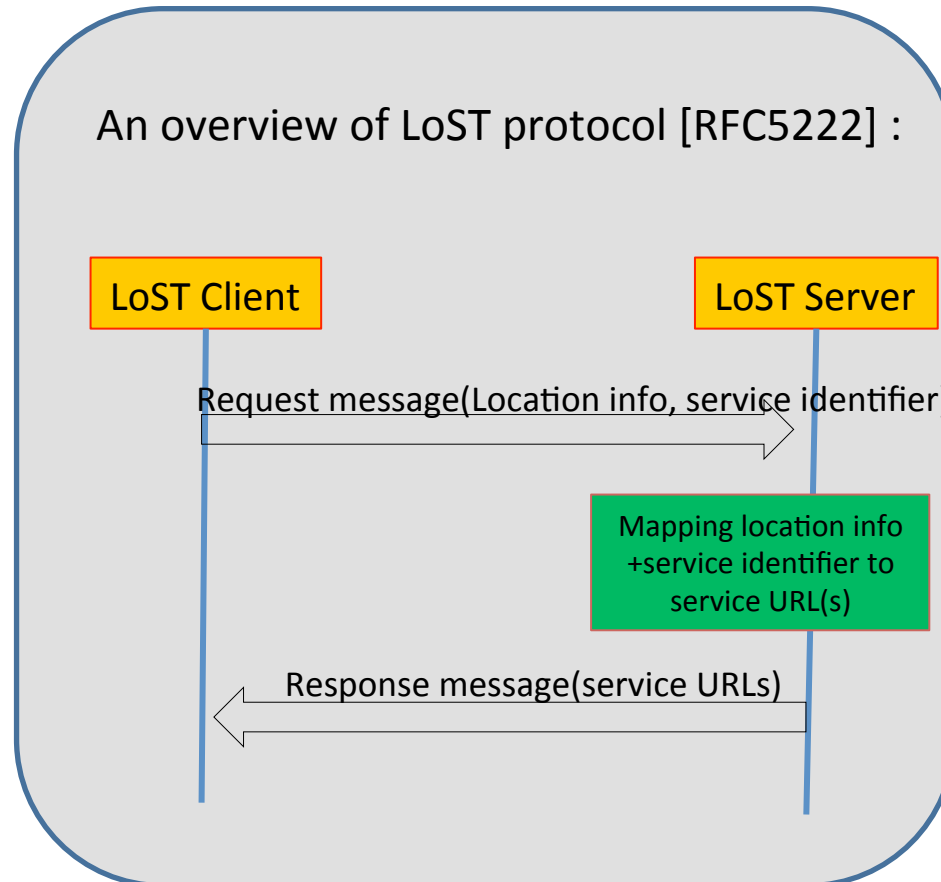
For step 2:

- (1) If WSDB DS is in master's regulatory domain, it returns URLs of databases in this domain.
- (2) If WSDB DS is not in same domain as master, it returns master's current domain and may include the listing server of that domain.

DB discovery mechanisms

- LoST protocol
 - LoST (Location-to-ServiceTranslation Protocol) is an existing protocol that takes geo-location as input and return server(s) which can serve for the geo-location.

For the discovery mechanism, master can be LoST client, WSDS DS can be LoST server.



Things to be solved

- How to deploy WSDB DS
 - who is in charge of WSDB DS?
 - can there any relationship between WSDB DSs?
- LoST can fit well for the db discovery mechanism, but there is a big issue: LoST is XML-based, and it may be inconvenient for a master to support both XML and JSON.
 - There may be some extension to LoST.

Thanks!