

PCE Database Requirements

draft-dugeon-pce-reqs-02.txt

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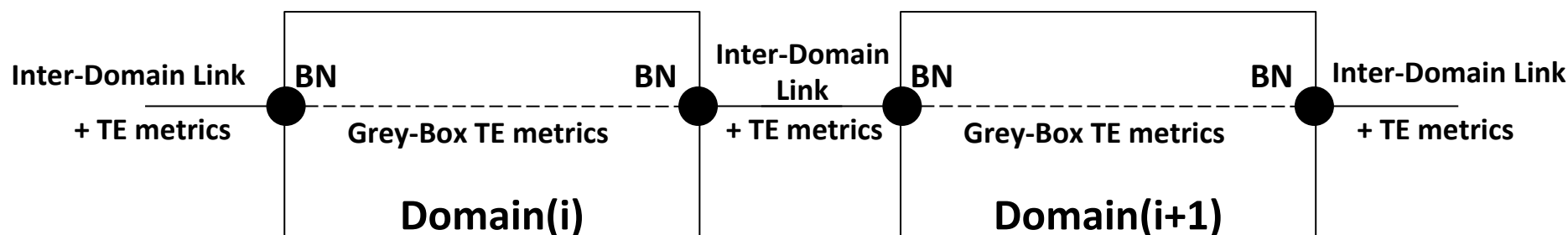
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Change since version 01

- Enlarge the scope of the draft to PCE Database Requirements
 - Add LSP DB as part of requirements
 - LSP knowledge is also required for efficient Global Concurrent Optimization
- Add PCE Database model for inter-domain part
 - Propose a simple model to define what needs to be exchanged
 - Goal: protocol requirements, not how to compute metrics
- Enhance requirements for the PCE Database population
 - Requirements for PCE Database synchronization between PCE

Inter-domain PCE Database model

- Contrary to intra-domain, the PCE inter-domain database does not contain the same detail level
 - Keep topology confidential
 - Avoid scalability problems
- Introduction of a "Grey-Box" model to allow PCE known sufficient detail on foreign domain
 - Inputs and outputs correspond to the Border Nodes (BNs)
 - Grey-Boxes are interconnected through inter-domain links between BNs
 - Suitable performance indicators are given to connect and to cross the Grey-Boxes
 - TE metrics between Input BNs and Output BNs
 - Reminds some of the L1VPN work
- PCE could look into the different inter-domain paths
 - Combine TE metrics of inter-domain links and Grey-Boxes
 - Select the most suitable one regarding the PCReq



Inter-domain status for PCE Database Population

- PCE Database needs synchronization with other PCEs for inter-domain cooperation
 - BRPC and Hierarchical PCE would benefit from it
 - A PCE is the owner of metrics within its own domain and they must not be modified by another PCE
 - No aggregation or summarization are allowed
 - But some filtering/redistribution rules are needed (e.g. to reflect peer agreement)
- Ongoing identified solutions
 - Management plane
 - North bound distribution of LSDB using BGP [draft-ietf-idr-ls-distribution]
 - PCNtf message to convey TE information of foreign domains
 - Today inside vendor attribute, tomorrow in a standard way?
- PCEP extensions for stateful PCE raised the point
 - New PCEP messages for LSP DB synchronization
- Why not consider PCE Database synchronization as a whole?
 - New draft common to all requirements on TED + LSP DB

Next Steps

- Get feedback from PCE WG
 - Some private e-mails, public discussion is also useful
- PCE Database synchronization is a hot topic
 - LSP DB synchronization part of PCEP extension for Stateful PCE
 - Opportunity to federate PCE Database definition and PCEP extension to synchronize PCED?
- Our next move: issue a -03 version
 - Taking into account GMPLS part
 - Adding analysis and best-current practice for intra-domain solutions
 - Adding analysis of inter-domain solutions