perfSONAR (PERformance Service Oriented Network monitoring Architecture)
- Services-oriented infrastructure for network performance monitoring

**Major perfSONAR Services**
- Measurement Point Service
- Measurement Archive Service
- Lookup Service: Registers all participating services and their capabilities
  - Topology Service
  - Authentication Service
  - Resource Protector Service

**IP Summarization Research Topic**
- Routers can condense some groups of routes down to a single link advertisement, reducing overall network complexity
- If no method existed for route summarization, every router would need to have a route to every subnet in the network environment

**But where should IP Summarization occur?** Which is the optimal node to summarize?
- There are several positional elements that are not directly connected to a leaf node, but simply used to “hold” the tree together
- Each non-leaf node should be a minimal CIDR summary
- A proper list of K Dominators would ignore the aforementioned positional nodes

- Possible pruning of the tree to remove useless elements, and pick out the top 3 dominating elements.
- But is this efficient?
  - The research intends to convey a fine-tunable algorithm to select nodes where summarization is to occur, providing a good balance of aggregation/router load

**The Lookup service**
- Key element of the measurement framework
  - Allows every independent service to be a visible part of the system
  - New services may identify themselves to the community and provide their detailed capabilities description
  - Other services are able to communicate to the LS in order to get this data (Lookup Information)

- gLS: Global LS instances, act as top level of hierarchy
- hLS: Local LS instances, manage registration of individual services and communicate a summary of information to the upper level

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