perfSONAR IP Summarization Topic in the Lookup Service

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perfSONAR (PERFormance Service Oriented Network monitoring Architecture)
•Services-oriented infrastrucutre 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
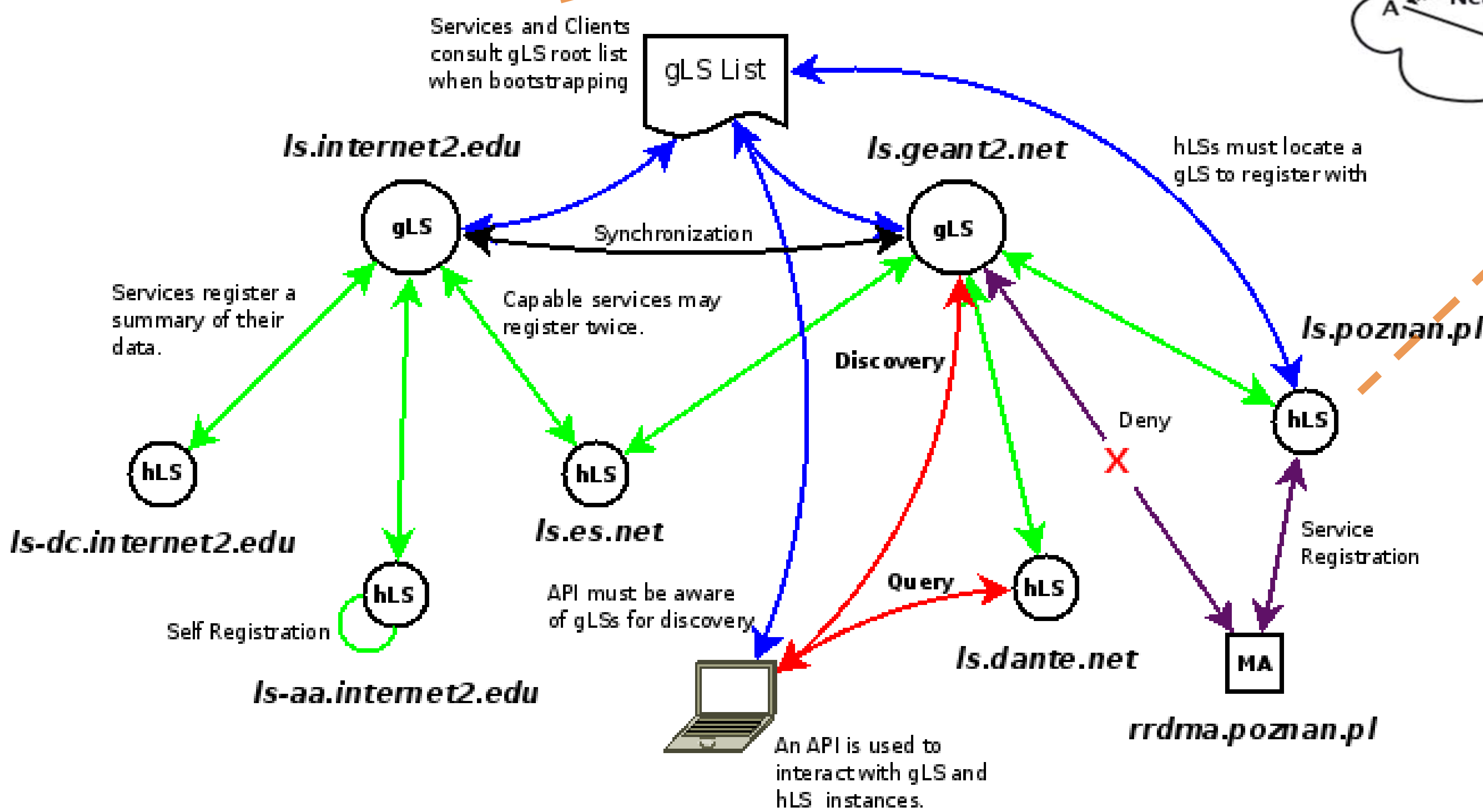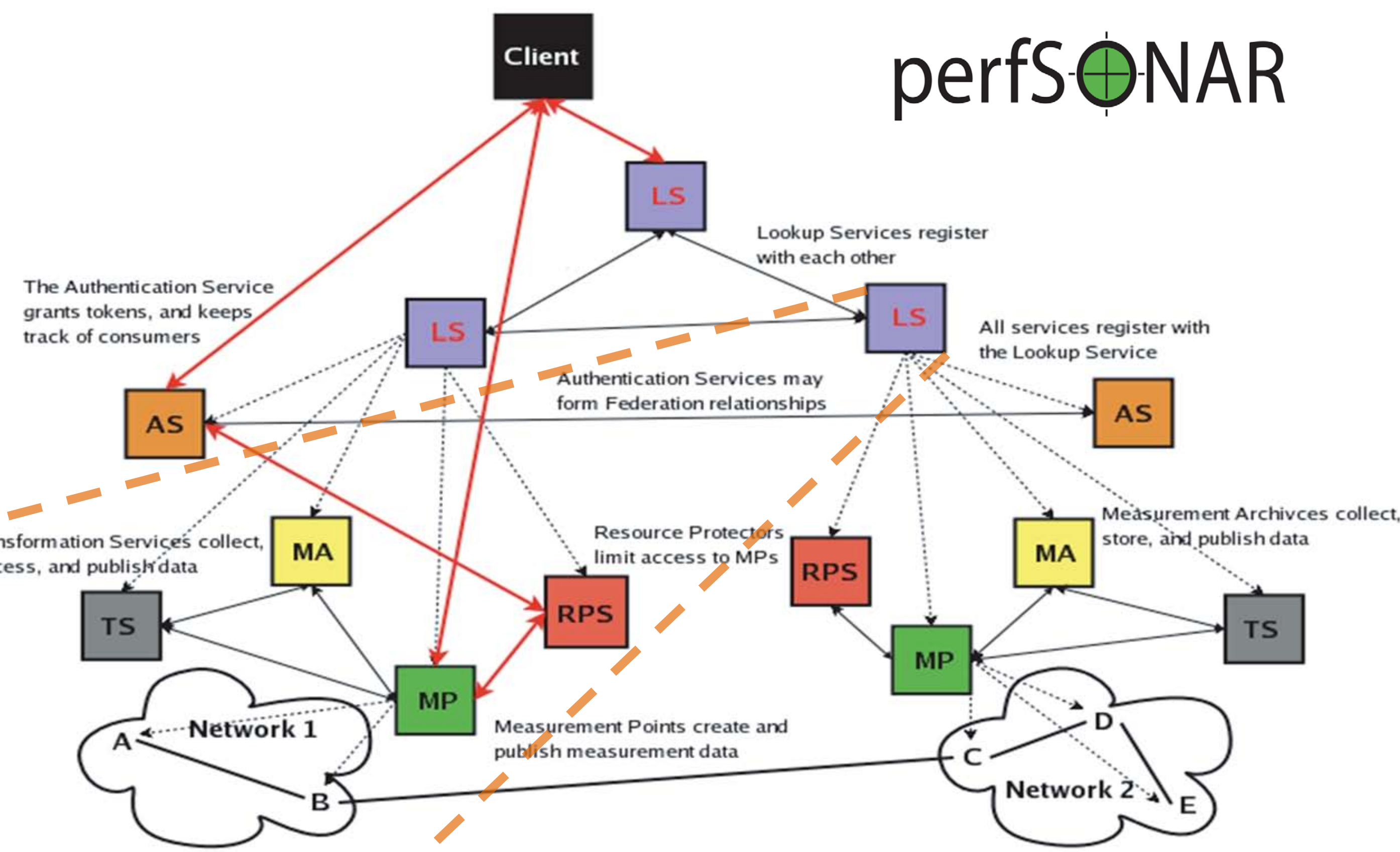
The Lookup service (LS)
•Key element of the measurement framework
•Allows every independent service to be a visible part of the system
•New services may identify themselves to the community and provide their detailed capabilities description
•Other services are able to communicate to the LS in order 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

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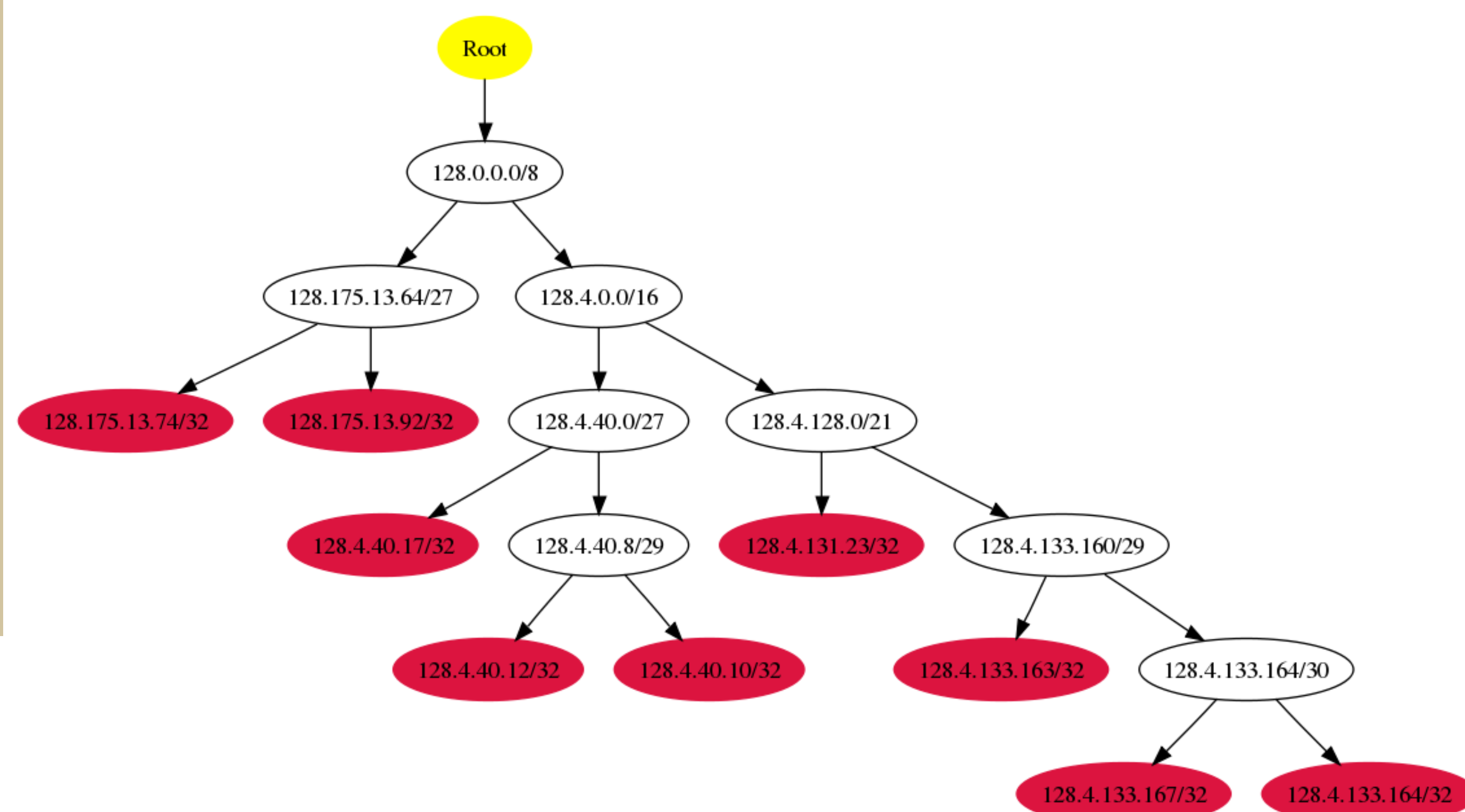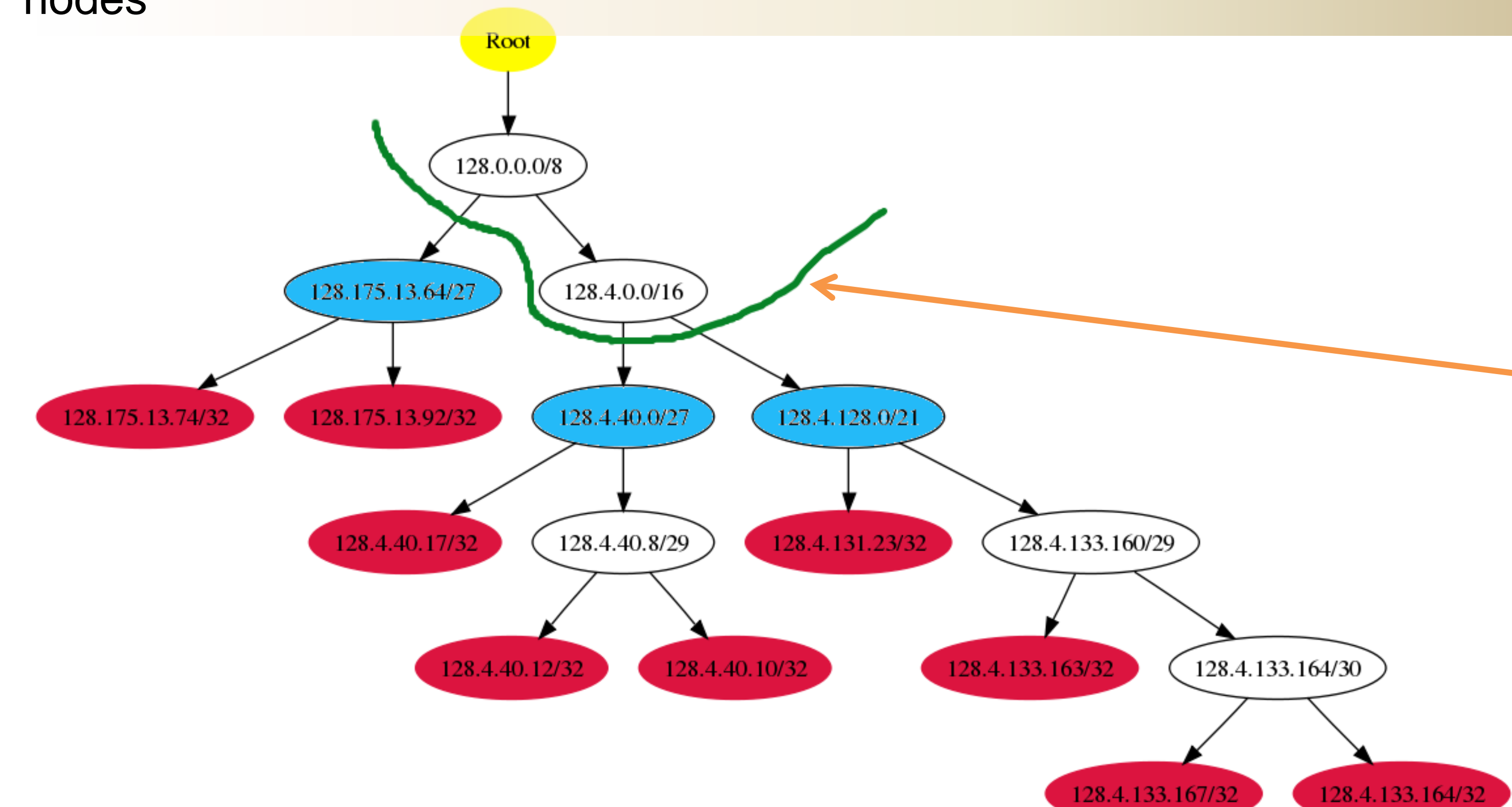
•Possible *pruning* of the tree to remove useless elements, and pick out the top 3 dominating elements.
•*But is this efficient?*
•The research intends to convey a fine-tunable algorithm to select nodes where summarization is to occur, providing a good balance of aggregation/router load