Project 3 – Pastry Protocol

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The aim of the project was to build a pastry protocol implementing the Join and Routing API.

From the paper, we’ve selected ‘b’ value to be 2. Leafset’s values are accordingly set i.e., 4 values greater than the given node and 4 values lesser than the given node. In the routing table we are checking up to 7 prefix values. Neighbor set has 4 values for each node.

We’ve made use of Supervisor to monitor GenServer processes. To maintain registry, we’ve installed extra dependencies –

In mix.exs file add:

defp deps do

[{:gproc, "0.3.1"}]

end

def application do

[

extra\_applications: [:logger,:gproc]

]

End

**What is working?**

The required APIs have been implemented and all three data structures described in the paper i.e., Leaf Set, Routing Table and Neighborhood Set have been implemented.

**What is the largest network you managed to deal with?**

Since the ‘b’ value is set to 2, minimum number of nodes that the network will route for is 9 i.e., numNodes >=9 will display Pastry performance.

Average number of hops was found to vary depending upon the numNodes and numRequests. This I believe is because of the large permutation possible for a nodeID. We tested for up to 5000 nodes.