Design and Implementation of a Power Proportional Cluster

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Non-power proportionality of servers

LoCal Cluster

NapSAC Architecture

Node Efficiencies

Take Aways

- Mobile and Embedded class processors provide good efficiency as well as the ability to go into deep sleep states.
- More efficient server class machines handle base loads. Traffic Spikes handled by agile nodes.
- Operating range with acceptable efficiency and response times can be defined.
- On a Wikipedia trace of 7 days – 70% savings with NapSAC as compared to a typically provisioned cluster.
- Savings in energy within 90% of an optimal provisioning manager (with future knowledge).