PEN – Perfsonar Endpoint Nodes

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Project Team

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The Beginning

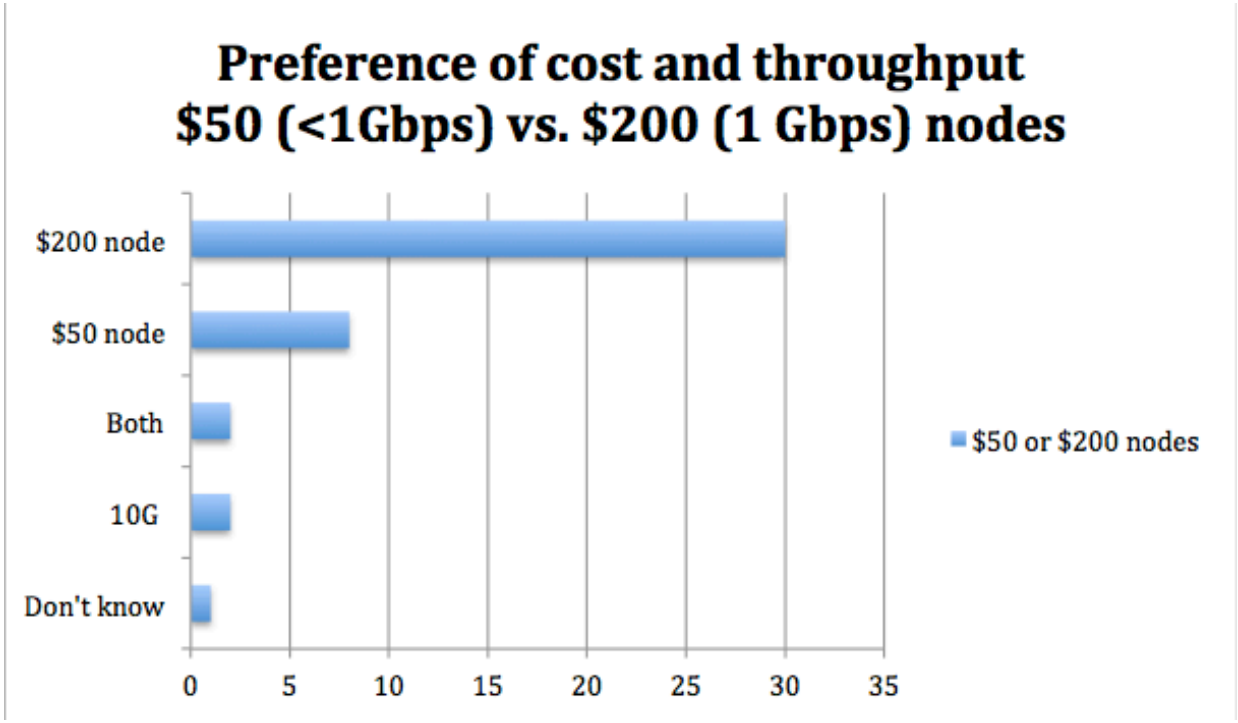
- Many people experimenting with and deploying perfSONAR on low cost / small form factor nodes
- perfSONAR project committed to officially test/support small number of configurations as part of version 3.5 roadmap
- Community survey undertaken to determine what node characteristics were most important to the community.

Initial Assumptions

- Initially shooting for “very low price” nodes
- ARM based solutions investigated
  - Cubox/perfCube (Brian Tierney, etc.)
  - Beaglebone / Raspberry Pi (Alan Whinery, etc.)
- Great for some use cases
- Can not support 1Gbps testing
- Cost profile could allow very large deployment
- Challenges in supporting ARM

Survey Surprise

- Survey respondents generally preferred slightly higher cost and the ability to test at 1Gbps



A Course Change

- Began investigating slightly higher cost/ performance nodes
- Targeting around $200 per node
- Capable of achieving 1Gbps BWCTL throughput
- Easy to install
- Intel CPUs to avoid complications with supporting ARM builds

perfSONAR

Intel Thin Canyon NUC Kit DE3815TYKHE

- Not able to push 1Gbps (can push 500Mbps, receive 920Mbps)
- Includes 8GB eMMC storage
- $177 shipped
- 36W power draw
- Works with Debian and CentOS
- Still attractive for <1Gbps

ASUS Chromebox M004U

- $152
- Internal 16G SSD, 2G RAM
- Comes with ChromeOS
- Difficult to install perfSONAR (includes using a paperclip to unlock BIOS)
- Very attractive price. May be an option for “hardcore tinkerers”

Intel NUC Kit DCCP847DYE

- 936Mbps in testing
- $232 with SSD. $190 with microSD + USB
- 65W. Requires a power cable to be purchased separately, C5 cord
- Missing power cable + highest cost made this less attractive than others

Gigabyte BRIX (GB-BXBT-2807)

- 937 Mbps in testing
- $225 with SSD, $180 micro SD +USB
- 30W power
- Currently preferred option. Low power, high performance.
- But… see next slide!

ECS LIVA

- $120-170 final cost.
- Internal 32-64G eMMC, 2GB RAM
- 15W power. Could be powered with PoE splitter!
- Arrived/Tested this week.
- Achieved 940Mbps
- Minor UEFI issues
- Stay Tuned!

What's Next??

- Finalize Testing: ECS LIVA node
- Develop flashable images
- HOWTOs for setting up nodes
- Scripts to make setup easier
- Post results and information to perfSONAR website:
- https://github.com/perfsonar/project/wiki/perfSONAR-Endpoint-Node-Project