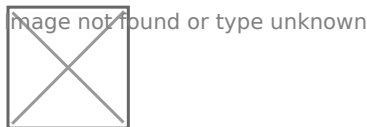


**Docket #:** S12-138

# High-Radix Interprocessor Communications System and Method

Stanford researchers and Cray Inc. have patented a highly efficient system and method for routing packets in a multiprocessor computer system. This high-radix communication system is detailed in US Patent [US 8,184,626 B2](#).



Computer system described above is designed to run demanding applications with high communication requirements. It is a distributed shared memory multiprocessor built with high performance, high bandwidth custom processors. The processors support latency hiding, addressing and synchronization features that facilitate scaling to large system sizes.

## Related Technologies from The Dally Lab:

[Stanford Docket S14-246 "Probabilistic Cache Replacement to Reduce Cache Misses"](#)

[Stanford Docket S12-374 "Power electronics system that harvests excess power from unbalanced photovoltaic modules to boost overall efficiency"](#)

[Stanford Docket S11-305 "Speculative Reservation Protocol"](#)

[Stanford Docket S07-039 "Flattened Butterfly: Cost-efficient High-Radix Topology"](#)

[Stanford Docket S07-359 "Technology-Driven, Highly-Scalable Dragonfly Topology"](#)

## Applications

- High performance interconnection networks
- Multiprocessor computer systems

- Data communication networks

## Advantages

- High performance
- High efficiency
- Topology and packaging scheme enables very flexible provisioning of network bandwidth

## Patents

- Published Application: [20090292855](#)
- Issued: [8,184,626 \(USA\)](#)

## Innovators

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- Dennis Abts
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