

Dynamic Resource Management for a Sensor-Fusion Application via Distributed Parallel Grid Computing

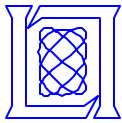
Albert I. Reuther & Joel Goodman

HPEC 2003

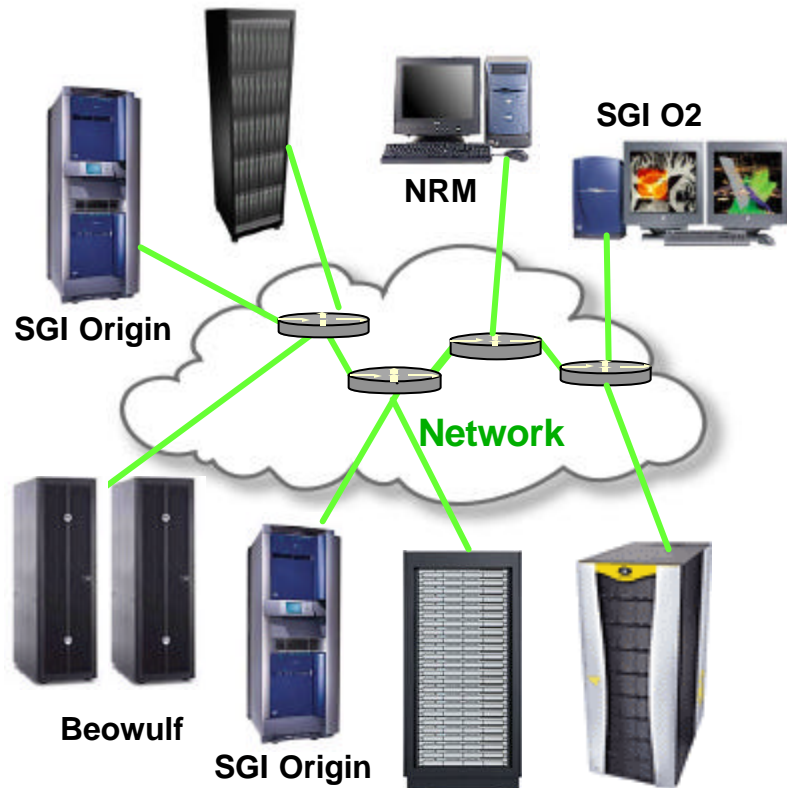
25 Sept 2003

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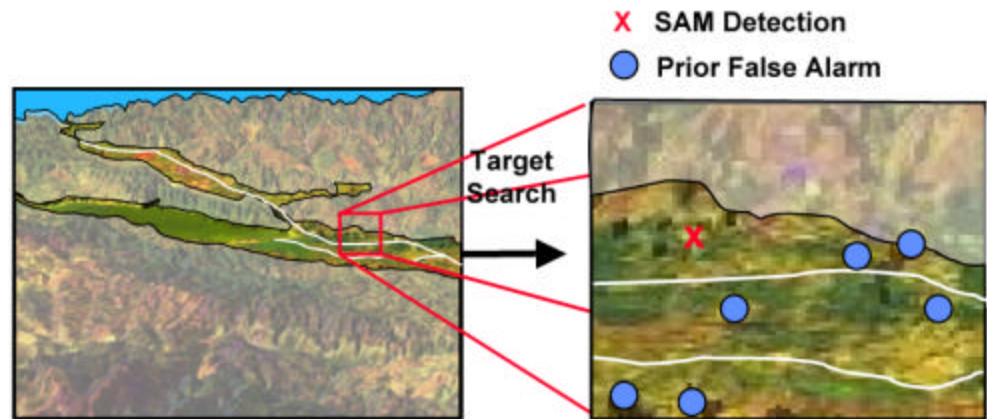
MIT Lincoln Laboratory



Problem: How does one build grid computing capability to enable real-time sensor data fusion?



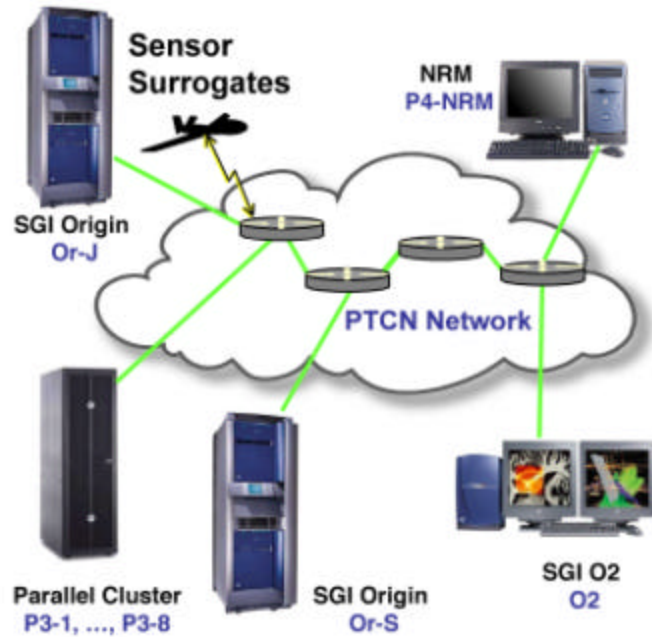
- Real-time processing
- Streamed signal processing applications
- Dynamic resource management
- Guaranteed Quality-of-Service
- Failover fault tolerance



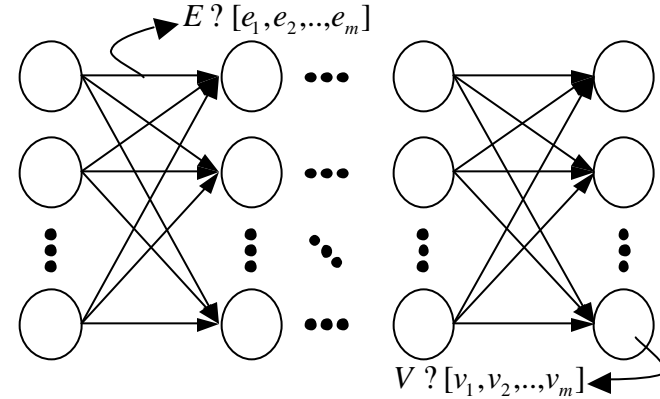
Operator Assisted Search and Integration System (OASIS)



Solution: Graph-based Network Resource Manager



TASK 1 (Stage 1) TASK 2 (Stage 2) ... TASK c-1 (Stage c-1) TASK c (Stage c)



- Determined most effective use of resources
- Launched application tasks on resources
- Ran multiple applications on same resources
- Demonstrated fault tolerant capabilities

