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Text Mining

- Aid in the understanding of genomic and gene expression data with the goal of therapeutic intervention.
- Initial Project
 - Articles from 5 years of 20 journals
 - About 150,000 articles
- Problem More than 24 hours to process about 5,000 articles on a single desk top computer
- Time Sensitive only as good as the last update



Pros of a Grid Solution

- Need for increased computational power
- Minimize the infrastructure required

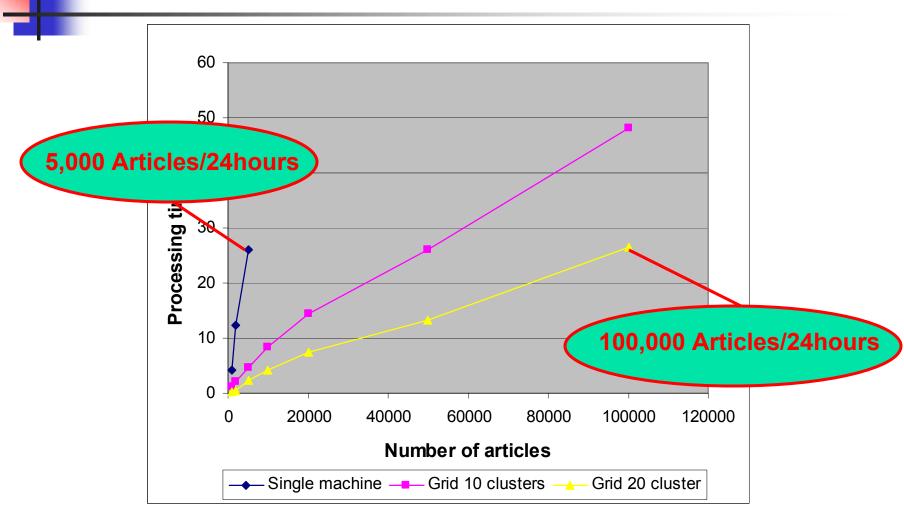
Cons of a Grid Solution

- Few applications are grid enabled
- Institutional psychology and sociology

Grid Validation

- Timing
 - Expected improvement
 - Efficiency
- Fidelity
 - Are the same results returned?
 - Single computer vs. grid
 - Repeated runs on the grid

Decreased analysis time in the grid environment



Fidelity

- 1,000 abstracts run on the grid
 - Divided in to 10 "chunks" (100 articles)
 - Repeated 3 times
- Results
 - Each run returned 430 records
 - >98% concordance
 - Variability seen when more than one pattern per sentence

Lessons Learned

Institutional Psychology

- Administration
 - Excited to be part of research
 - Only use their machines at night
- Information Technology
 - Easier maintenance and updating
 - Use of untapped resources
 - Still wonder at times if we are the cause of network slowdown

Use of Professional Services

- Set up grid
- Grid enable your applications
 - LexiQuestMine(SPSS)
 - GetItRight(CTH Technologies)

Initial Project

- Go ahead with the project
 - "Pilot Project" has limited usefulness
- Other ways to use the grid

What is Next?

- Expansion of text corpus to 10-15 years of 100 journals
- Automation of process update on a regular schedule
 - Downloading of journal articles
 - Concept extraction and processing

Additional Grid Projects

- Analysis of large data sets:
 - Moving programs to the data for analysis

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Fidelity Test (single vs. grid)

Run Number (1000 articles)	Single machine	Grid 10 clusters	Grid 20 clusters	Run Number (5000 articles)	Single machine	Grid 10 clusters
1	735	743	741	1	4143	4156
2	735	742	732	2	4143	4157
3	735	743	743	3	4143	4148
4	735	742	734	4	4143	4138
5	735	734	745	5	4143	4148