Without Reduction
Storage Increases with Time and # Peers
With Reduction
存储与率削减相关的存储

Storage Costs for P2P Hierarchical Reduction
WITH REDUCTION

Simulation Configuration (Increasing Number of Peers)
Simulation Steps (Time)

History Buffer Size
- 1000-1200
- 800-1000
- 600-800
- 400-600
- 200-400
- 0-200
Document size (number of atomic sections) influences history buffer size (trend plots), but overall, each converge at large collaboration densities.
Conclusions

• Reduction does significantly decrease history buffer space requirements
• Size of the history buffers decreases with increased collaboration densities
• Reduction factor does not significantly contribute to decreasing storage cost
Authoring Academic & Large-scale Documents in MS Word
Motivation

• LaTex and Adobe are popular academic formats
• Authoring tools and features abound in MS Word
• But MS Word formatting is printer specific
  – I’ve been “burned” when submitting in DOC format!
• How can we use MS Word features but achieve “safe” formatting of PDF
MS Word isn’t Evil

• It’s a proprietary format in 2003
  – But DOCX (2007) is XML and open standard
• Many features to make life easier
  – Use EndNote (for bibliography)
  – Auto table (content, list of figures, etc.) creation
  – Added bibliographic management in 2007
  – Equation editor
  – Programable (VBA or .NET)
• Can export/save to PDF
First Things First

• Install a PDF “print” driver (via Adobe)
  – Print/”save as” PDF without changes (mostly)
• Use styles
  – Like CSS in HTML (format once, apply globally)
• Layout document, then fill in details/content
• Watch out for gotchas
  – “Roaming” figures/images
2003 vs. 2007

• Some nice formatting/style features added in 2007 (“SmartArt”)
• Bibliographic management added in 2007 (but you get this with EndNote and 2003)
• Print to PDF very slow in 2007 (1+ hour)
  – “Save as PDF” plug-in available in 2007
  – Not included by default!
• Excel 2007
  – Handles larger data sets in my experience (200+ columns, 64k+ rows)
  – Better string splitting functions (text parsing)
Working with Equations

This is a sample function in Word 2007: \[ a^{b^{c^{d^{e^{f^{g^{h^{i^{j^{k^{l^{m^{n^{o^{p^{q^{r^{s^{t^{u^{v^{w^{x^{y^{z/w}})}}}}}}}}}}}}}}}}}}}}\] as you can see, it’s automatically added into the text and the spacing adjusts around it. You can also make it disjoint from the text so that it stands alone and you can position it manually (with a non-relative anchor). Notice the auto-sizing of the brackets and the various exponential levels.
Sections (Headers/Footers)

- Vital to establish different sections
- Each section can then have distinct headers/footers
  - Body pages numbered 1, 2, ...
  - Front matter numbered i, ii, ...
Table of Contents and Figures

- Select what level to display (based upon styles – i.e. h1, h2, etc.)
- Format based upon styles
- Auto-updates if you change the text
- Automatically displays page numbers
Bibliographic Management

• Add/manage sources
• Reference them via placeholders
• Select how to display sources (APA, MLA, etc.)
SmartArt

MS Work
- CS beneficial

Core Courses
- Cover 6 areas
- Explore interests

Qualifiers
- Validates knowledge of fundamentals

Proposal
- Preliminary ideas defined
- What will you do?
- Define contributions
- Flexible

Defense
- After ~1 year of steady research
- Publications validate externally
- Communicate beforehand with committee