RUBiS Design Review

William Pugh
Boy this sucks

• Papers show that EJB has much worse performance than JDBC or PHP
• Don’t know why
  – need to get their experiments up and running
• But, boy, does their EJB implementation suck
• Only looked at the EJB 2.0 local interface implementation
Design

• Uses Entity beans to represent persistent state
• Use SessionFacade to access entity beans
• Uses:
  – bean managed transactions
  – no container-managed relationships
  – manual authentication in each session bean
Entity Beans
No homes cached

• multiple JNDI lookups performed for most business method
  – 6 JNDI lookups performed for SB_AboutMe.getAboutMe(…)

• How should we do it?
  – do in ejbPostCreate/ ejbActivate?
  – Static Singleton?
    • hard to make this work in EJB world
Transactions

- Transactions used for lots of read-only business methods
  - SearchItemsByCategory
  - SearchItemsByRegion
  - BrowseCategories
  - BrowseRegions
  - AboutMe
Transaction Collapse

• In paper, JBoss falls down when transactions start timing out
  – presumably, system was slowing down to the point where transactions were taking too long
  – What was the transaction timeout?
  – How to handle overload in transaction environment?
    • timeout and rollback obviously don’t work
    • better to just immediately fail some transactions
Transaction Collapse

• Before collapse, most operations pretty fast
• After collapse, three operations are never fast
  – BrowseCategories
  – BrowseCategoriesInRegion
  – SelectCategoryToSellItem