Internet and Intranet Protocols and Applications

Lecture 10x: Testing RUC

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What Needs Testing?

• Logic
• Communications
• Timing
• Other?
What’s The Best Way to Test?

• As simply as possible
• As systematically as possible
• Start small
Testing Techniques

• Best: Symbolic debugger
• OK, traditional: println() statements
Unit Testing

- What is it?
- Why’s it a good idea?
What should you test for?

• Common case
• Boundary cases
• Unusual data
What can be unit tested in RUC?
( Depends on your code structure, of course)

• Parsing and storing the command line arguments
• Writing and reading sequence numbers
• Putting a datagram into the reassemble buffer
• Reassembling a set of received datagrams with a given SN
• Reassembling as much data as possible from the reassemble buffer
JUnit

- http://www.junit.org/index.htm
- http://junit.sourceforge.net/
Coverage Testing

• What is it?
• Why’s it a good idea?
What about FUES?

• Good for
  – Making unpredictable datagrams

• Bad for
  – Making predictable Coverage Tests

• Good or bad?
  – For testing timing
What about

• Sending specific, known, test messages to RUC
• How might you do this?
• Make a UDP echo program (and have RUC send to it):
  – receive first datagram and determine RUC’s sending port and address
  – send test datagrams to RUC